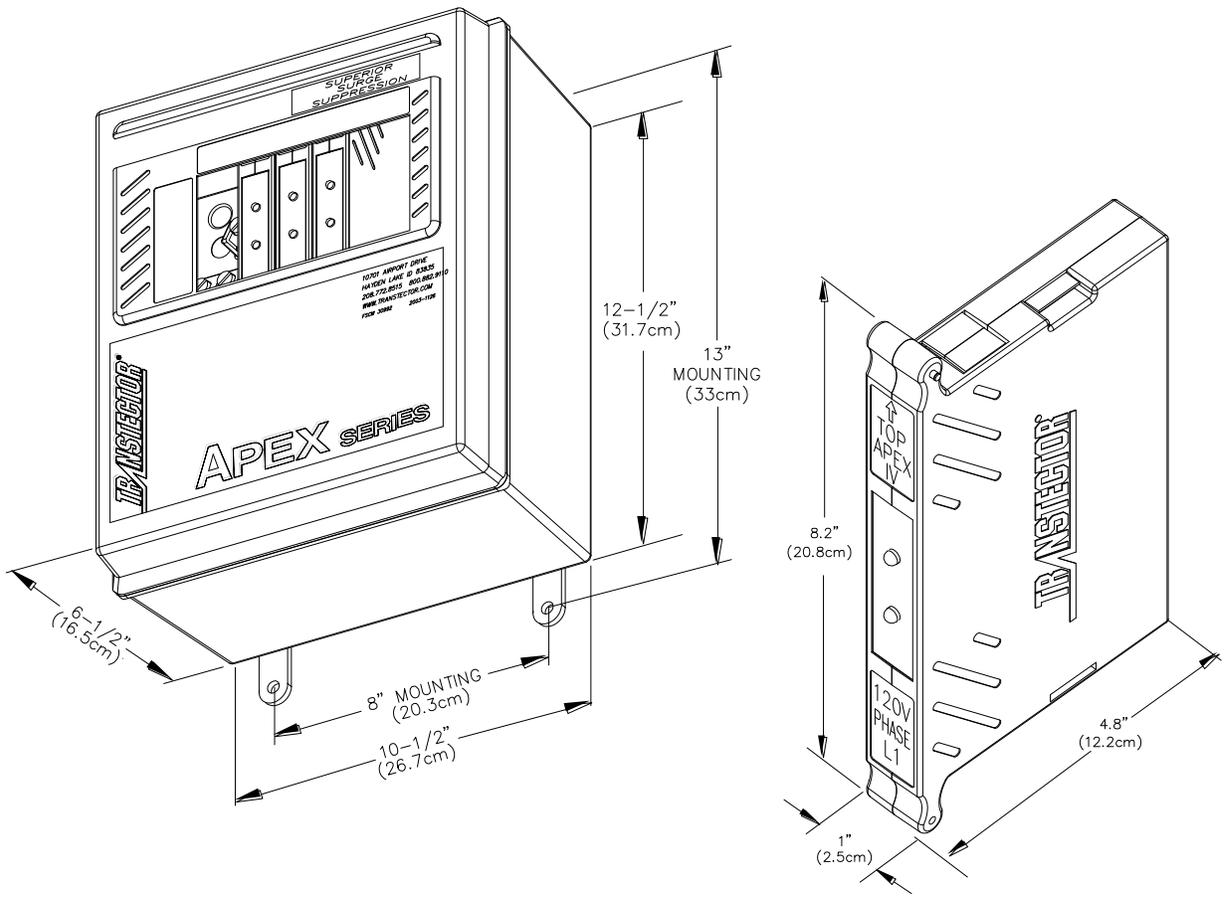


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REVISIONS				
LTR	DESCRIPTION	ECO NUM.	DATE	APPROVED
F	CORRECT DESCRIPTION	13343	7/13/15	MTH



DRAWN:	KRH	DATE	10/23/01
CHECKED:	CVM		10/26/01
ENGR. APPD:	DWR		10/26/-1
PROJ. APPD:	CDD		10/26/01
APPROVED:			



TITLE: **PRODUCT SPECIFICATION
APEX SERIES**

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1.0 Introduction: The Apex Series™ Transient Voltage Surge Suppression cards limit the high speed, high voltage transients to 120% of the line level on AC electrical services. This function is provided with silicon avalanche diodes in Transtectors' patented Spatial Array design. This unique design, with increased surface area, Advanced Silicon Array Technology (ASAT), offers the greatest performance characteristics available in a silicon avalanche diode suppressor. The suppressor cards have indicators and optional remote annunciation circuits for status monitoring. The Apex Series™ arrangement allows for configuring a suppressor on any AC voltage from 120V to 240V, single or three phase. Each card operates line-to-neutral or line-to-line depending on the system to be protected. The Apex card plugs into the Apex suppressor enclosure. Installation, service, maintenance and system upgrades are made easy and inexpensive with this system. The remote annunciation circuit uses isolated relay contacts with a plugable terminal block.

2.0 Electrical Characteristics:

2.1 Standard Electrical Services: Cards are available for these standard voltages:

<u>RMS Voltage</u>	<u>Max. Operating Voltage, RMS</u>	<u>Protection Level Min/Max., Peak</u>
120V	150V	220/330V
240V	280V	440/660V

* For other voltages contact Transtector Systems, Inc., 1-800-882-9110 for information.

2.2 Standard System Configurations: The Apex Series™ is configured for each specific application by referring to the following table and Section 2.3

<u>Part Number</u>	<u>Description</u>	<u>Voltage Configuration</u>
1101-460	APEX IV X5 120TMR	120V Single Phase
1101-439-42	APEX IV X5 120TR	120V Single Phase
1101-676	APEX IV X5 120TMR-NE	120V Single Phase
1101-464	APEX IV X5 120WMR	120V Three Phase Wye
1101-439-43	APEX IV X5 120WR	120V Three Phase Wye
1101-647	APEX CP 120 X5 SMWI	120V Line-Neutral
1101-719	APEX IV X5 120WRI	120V Three Phase Wye
1101-610	APEX IV X5 240 SM	240V Single Phase
1101-494	APEX IV X5 240WMR	240V Three Phase Wye
1101-446-43	APEX IV X5 240WI	240V Three Phase Wye



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2.3 Application Rating:

2.3.1 The Apex 120V products are Listed to UL 1449, 3rd edition (Category VZCA) and are certified to Canadian Standard CSA C22.2 NOS 8-M1986 and ECN516. The products meet National Electric Code (NEC) Article 285.6 with a Fault Current Rating of 42kA, and of 200kA when used in conjunction with 30Amp Class J fuse or equivalent.

2.4 Electrical Performance:

- 2.4.1 Testing: Per ANSI/IEEE C62.45 1992 Using IEEE C62.41 1991 Wave Shapes
 - 2.4.1.1 Location Category A: 6kV, 200A, 100kHz Ring Wave.
 - 2.4.1.2 Location Category C1, B3: 6kV, 500A, 100kHz Ring Wave; 6kV, 3kA Combination Wave.
 - 2.4.1.3 High Exposure Location Category C3: 20kV, 10kA Combination Wave.
 - 2.4.1.4 Long Wave 10/1000 Stress Surge Per IEEE C62.41 1991 (Section 10.2 and Table 8).
 - 2.4.1.5 Response Time (Max.):.....<5 nanoseconds
- 2.4.2 Standby Power (Max.):.....8 Watts
- 2.4.3 Operating Temperature:..... -30 C TO +65 C
- 2.4.4 Relay Rating (optional):
 - 2.4.6.1 Contact Rating:..... 3A/300VDC, 3A/250VAC
 - 2.4.6.2 Contact-to-Coil Isolation:.....3000VAC

3.0 Status Indicators:

3.1 LED Indicators:

3.1.1 Each suppressor card has one amber LED that illuminates to indicate when power is applied to the enclosure.

3.1.2 Each suppressor card has one green LED that illuminates to indicate it is operational. This LED will extinguish if the suppressor card becomes non-operational. Caution: AC power may still be applied. Refer to section 3.1.1 for Power Indication.

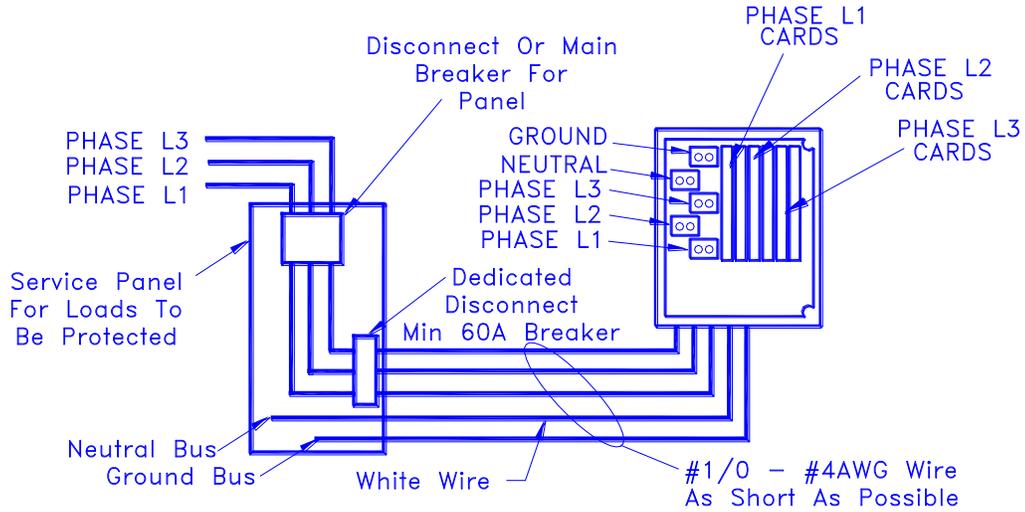
3.2 Remote Annunciation: Each suppressor card has a set of “dry”, isolated relay contacts that will change state with loss of suppressor function or loss of applied electrical power. The contacts are labeled C (common), NC (normally closed) and NO (normally opened) with respect to the power off initial condition. Each card is provided with a detachable, three-pin plug for relay wiring. The plugs are sized for use with 22 – 14 AWG wire and are rated for 15A/300V



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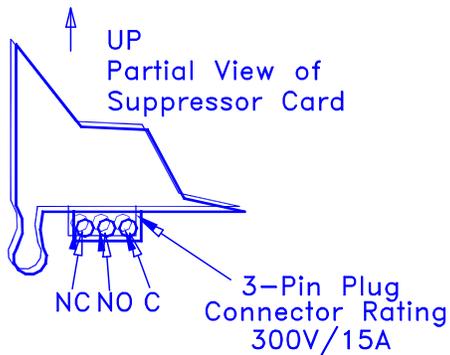
Installation Diagram



Danger – High Voltage

Warning:
 Use 120V Suppressor Cards only.
 Shut off electrical power before servicing.
 Service by authorized personnel only.

Relay Contact Wiring



Contact Positions Shown With AC Power Off.
 Contacts Change State With Loss Of AC Power Or
 Suppressor Non-operational.
 Contact To Coil Isolation: 3000V
 Contact Rating: 3A 250VAC

4.0 Mechanical:

4.1 Material Ratings:

4.1.1 Enclosure: The suppressor enclosure is fabricated from a polyester/fiberglass composite material with a UL fire rating of UL 94-5V and NEMA type 4X, CSA type 4 and IP66 ratings.

4.1.2 Backpanel: The internal backpanel is molded from an advanced thermoplastic resin with a UL fire rating of 94-5V.

4.1.3 Suppressor Card: The card is molded from an advanced thermoplastic resin with a UL fire rating of 94-5V.

4.2 Dimensions: The overall size of the suppressor is 12-1/2"H x 10-1/2"W x 6-1/2"D (31.7cm x 26.7cm x 16.5cm). Each card is 8.2"H x 1"W x 4.8"D (20.8cm x 2.5cm x 12.2cm).

4.3 Weight: The weight of the Apex enclosure is 4lb (1.8kg). Individual suppressor cards typically weigh 1.5lb (.7kg). The total gross weight depends on the number of cards used for specific applications.

4.4 Mounting: The wall mounting pattern dimensions are 13"H x 8"W (33cm x 20.3cm). The mounting foot hole is sized for 1/4" (6mm) hardware.

4.5 Electrical Connections: Electrical power connections are made to the suppressor using the wiring lugs that are sized for 6AWG-through-1/0 wire (4.67mm-through-9.3mm). The suppressor can be wired in parallel with the load. All cable lengths should be as short as possible for optimum suppressor performance.

4.6 Disconnect: It is recommended that the suppressor be installed off a dedicated disconnect, molded case switch or circuit breaker with a minimum 60 Amp rating. This would facilitate removing power from the suppressor if required. The disconnect should be sized for use with the appropriate gauge wire for the application and fault current rating of the power distribution system.

4.7 Door Latching: The panel is provided with a latching system that includes a snap latch in the bottom corner and a screw down latch in the top corner. The snap latch has a built in pad-lockable feature for installations that require more security.

4.8 Conduit Placement: A preferred conduit placement label is located on the exterior, bottom left side of the Apex enclosure. This label indicates the ideal hole drilling location for the installation of conduit for the electrical power feed to the unit. The Apex enclosure layout permits a wide variety of conduit placement and internal wiring routing. In addition, the unit can be mounted in any orientation that is required. The correct conduit connections for maintaining the Apex enclosures environmental rating must be installed in adherence to local and national electrical codes.



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