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www.ArcSuppressionTechnologies.com

ARC SUPPRESSION TECHNOLOGIES

PATENT PENDING

NOsparc MMYac™
DATA SHEET

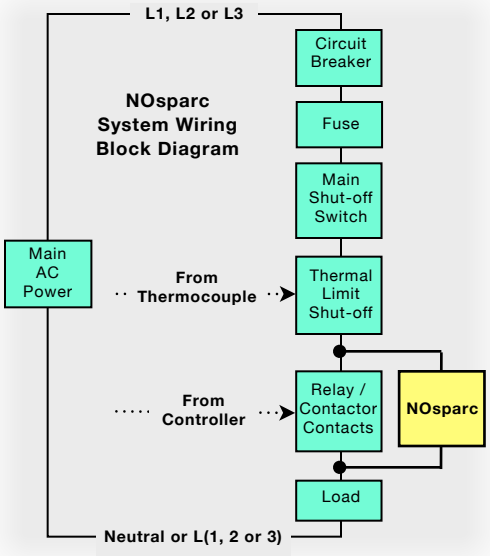
PRODUCT NOTES

Connect NOsparc MMYac across the power switching relay or contactor contacts only!

NOsparc MMYac capabilities will be fully effective even under mixed load conditions.

NOsparc MMYac has been designed to support the following AC power loads:

- General Purpose
- Resistive
- Capacitive
- Inductive
- Motor
- Tungsten
- Ballast
- Pilot Duty



Additional information and a full User's Manual for this product may be found on our website:

www.ArcSuppressionTechnologies.com

Industries:

- **Commercial**
- **Industrial**
- **Defense**

PRODUCT OVERVIEW

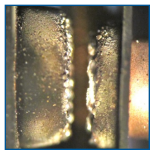
NOsparc MMYac is a two terminal contact arc suppressor that attaches across the contact points of a power relay or contactor. The product is designed to protect the contact points from premature destruction due to contact current arcing.

The destructive power of electrical current contact arcing is the primary factor determining the operating performance and lifespan of a power relay or contactor. NOsparc MMYac™ is a two terminal arc suppressor designed to protect the contact points of relays from the effects of electrical current contact arcing. This allows the relay or contactor to operate more consistently and reliably ... over a much longer period of time.

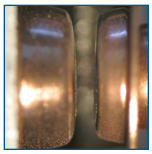
The NOsparc MMYac™ (AC power applications) has a simple, elegant and straightforward design that allows it to be connected across the two contact terminals on existing products and equipment with just two wires! It is tolerant of harsh environments due to its rugged construction and highly reliable design methodology.

During normal relay or contactor operation, the NOsparc MMYac detects the nascent arc as if forms and suppresses its energy all within about 5µs (5 millionths of a second!). The result is a low energy "arclet" with arc energy of only a few µJ as opposed to a full contact arc that is hundreds of mJ (or more). This allows an arc suppression factor to be calculated from the difference in energy. For example, at 20A, 240V, the NOsparc MMYac has an arc suppression factor of 1250.

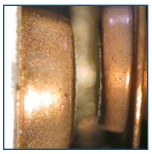
Unused Relay Contacts



Relay Contacts w/100K Cycles without NOsparc



Relay Contacts w/100K Cycles with NOsparc



Relay Contacts w/1 Million Cycles with NOsparc

The pictures above show how use of the NOsparc MMYac can keep a relay's contact points in nearly new condition. In fact, arc suppression both improves relay operation and extends the inevitable end-of-life of a standard relay/contactor by a factor of 100 times or more under normal, specified relay operating conditions (please refer to the relay or contactor specifications).

FEATURES	BENEFITS
Extends Relay or Contactor Life 100 Times or More	- Reduced maintenance, repair and replacement costs - Dramatic reduction in total cost of ownership
Adaptable - Small footprint - No neutral connec-tion needed - No external power required - Only two (2) wires! - "Connect & Forget" operation	- Easy adaptation to existing infrastructure (quick and simple retrofitting process) - Minimal impact to design due to size of the hardware solution - Suitable to use on any make / model of relay or contactor - No special or complicated assembly requirements or associated connec-tions to auxiliary equipment
Low Power	- Negligible impact on energy costs - Increased reliability
Green	- RoHS compliant - Reduced Ozone and other polutants
Lower EMI	- 15dB reduction of EMI over the range of 30MHz to 1GHz

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SPECIFICATIONS

ARC CURRENTS:
Break ..... "Steady-State" ..... (contacts opening)
Make ..... "Inrush" ..... (contacts closing)

ARC SUPPRESSION:
Duration ..... 1/2 cycle ..... (maximum)

CIRCUITS:
Single Phase ..... One (1) ..... (multiple units for multiphase operation)

CIRCUIT FUSE RATING:
Maximum ..... 50A ..... (do not exceed fuse rating)

CONTACT CYCLING:
Maximum Cycle Time* ..... 125ms ..... (*DO NOT exceed relay cycle time operating specifications)

DIMENSIONS:
Length ..... 1.000" ..... (2.540cm)
Width ..... 0.470" ..... (1.195cm)
Height ..... 0.920" ..... (2.335cm)

ENVIRONMENTAL:
Operating Temperature ..... -40°C To 85°C ..... (-40°F to 185°F)
Storage Temperature ..... -50°C To 125°C ..... (-58°F to 257°F)
Humidity ..... 5% to 95% ..... (non Condensing)

FREQUENCIES:
Typical Operating Frequency ..... 60Hz ..... (North American Power Frequency)

INTERFACE WIRES:
Across Relay or Contactor ..... Two (2) ..... (W1 / W2 non-polarized)

LEAKAGE:
Leakage Current ..... 0.2/10mA ..... (12/277Vac)

POWER-ON:
Load Current Passthrough ..... 1/2 cycle ..... (maximum)

PRINTED CIRCUIT BOARD (PCB) MOUNTING:
Orientation ..... Any ..... (see "BOARD AFFIXATION" section of User Manual)
Four plated through holes ..... 0.038" diameter ..... (on Printed Circuit Board (PCB))

RELIABILITY:
MTBF ..... 50,000 Years ..... (MIL-HDBK-217F)

TERMINATION:
Two dual posts ..... 0.025" square posts ..... (0.1" center)

VOLTAGES:
Minimum Operating Voltage ..... 12Vac ..... (lowest open contact voltage)
Maximum Operating Voltage ..... 277Vac ..... (highest open contact voltage)
Maximum Varistor AC Voltage ..... 300Vrms ..... (refers to varistor within device)
Typical Varistor Clamping Voltage ..... 470V ..... (at 1mA)

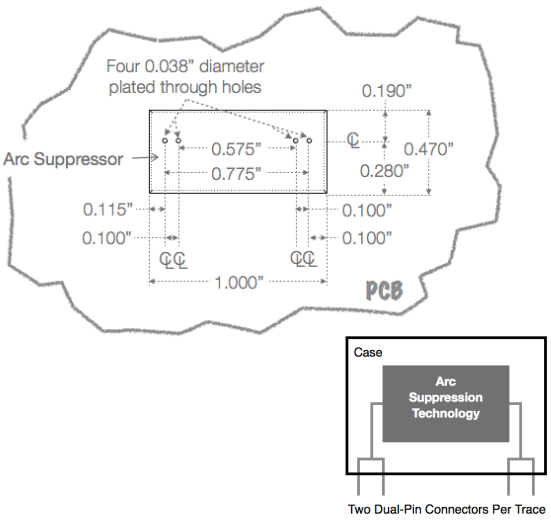
WEIGHT:
Net Weight ..... 1 Oz ..... (28g)

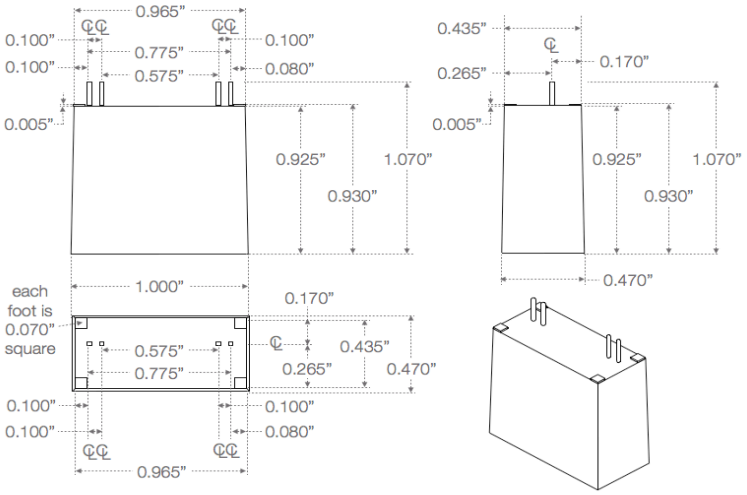
Underwriters Laboratories NKCR2
"Auxiliary Devices—Component"

c UL us
File No:E346457

The above mark indicates that Underwriters Laboratories, inc. has certified the NOsparc MMYac as a UL Recognized Component for both Canada and the United States.

PCB FOOTPRINT AND CASE DIMENSIONS





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