

NEMAtrol

NEMA 4X/IP65 Enclosures For 'trol & 1/8 DIN Cases

Features

- Compatible with all Standard Size 'trol", SUPERtrol & 1/8 DIN Products
- Meets NEMA 4X/IP65 Specs.
- Quick-Release Latches
- Light Weight

Application:

Ideal for use in most petro-chemical plants, sewage plants, food processing areas, packing plants, electro-plating plants, etc.

Construction:

- Molded fiberglass reinforced polyester material has excellent chemical resistance and outstanding physical properties.
- Fiberglass material is easily punched, drilled, filed or sawed.
- Oil-resistant gasket attached with oil-resistant adhesive.
- The enclosures have corrosion-resistant fiberglass hinges and spring-loaded fiberglass latches attached with monel screws.

Physical Properties	Enclosure Value	ASTM Method
Flexural Strength	17,000 PSI	D-790
Heat Distortion	400° F	D-648
Water Absorption (24hrs.)	.5%	D-570
Tensile Strength	6,500 PSI	D-651
Specific Gravity	1.8	D-792
Flammability	94-5V	UL94
Dielectric Strength	400 V.P.M	D-149
Arc Resistance	180 Sec.	D-495

Ordering Information

Part Number

NEMAtrol4X (NEMA 4X enclosure for all standard 'trol units
7.365" x 2.495" cutout)

NEMAtrol 4x0 (no cutout)

NEMAtrol 4x1 (1 cutout)

NEMAtrol 4x2 (2 cutouts)

NEMAST4X (NEMA 4X enclosure for SUPERtrol series)

NEMAST 4x1 (1- 5.43" x 2.68" cutout for SUPERtrol series)

NEMAST 4x2 (2- 5.43" x 2.68" cutout for SUPERtrol series)

NEMA-1/8DIN (NEMA 4X enclosure for all 1/8 DIN size units)

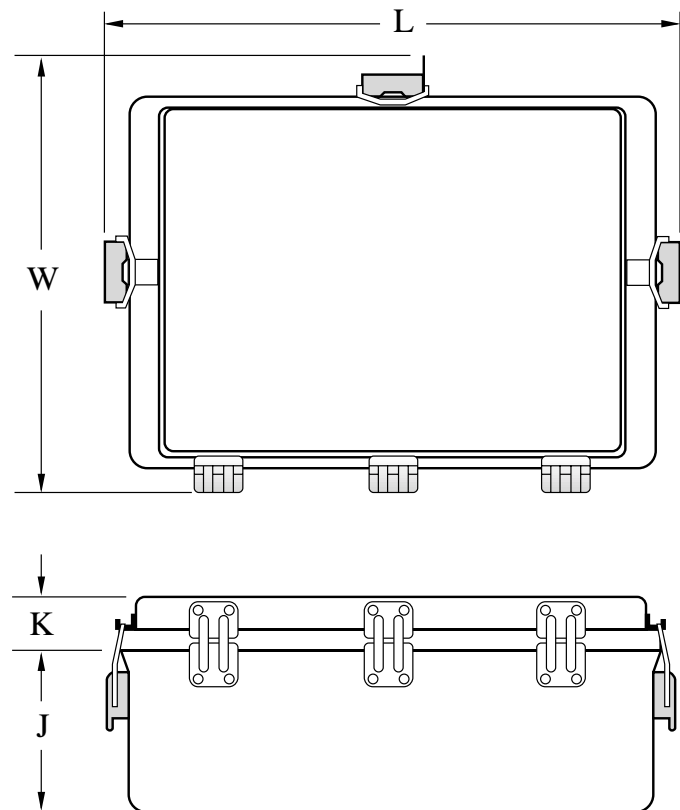
NEMA-1/8DIN 4x0 (no cutout)

NEMA-1/8DIN 4x1 (1 cutout)

NEMA-1/8DIN 4x2 (2 cutouts)



Dimensions:



REPLACEMENT PRODUCTS & ACCESSORIES

Part Number	W	L	K	J
NEMA-1/8DIN	7.86 (200)	8.97 (228)	1.00 (25)	4.38 (111)
NEMAtrol4X & NEMAST4X	9.86 (250)	12.97 (329)	1.75 (44)	5.13 (130)

Installation Of Electronic Instruments In Industrial Environments

KEP electronic equipment has been designed for industrial use and has a high degree of built in noise immunity and spike protection. But even the best equipment can experience difficulties in operation if certain minimal considerations are not adhered to when installing the equipment.

Stray electrical spikes of several thousand volts have been observed in industrial equipment. These can get into the electronic equipment and cause momentary disruption, erratic display, lock up or permanent damage. It appears that noise can come from at least 4 sources:

RECOMMENDED ARC SUPPRESSION:

1) Supply line

An MOV (metal oxide varistor) placed across the supply lines at the unit often clips the high voltage spikes sufficiently to prevent malfunction. A line filter offers added protection (See Figure A). For areas where there are large power surges caused by switching on and off large motors, solenoids, welders, etc. or by electronic switching of large variable speed drives, it may be necessary to install lightning arrestors or isolating power supplies to run the electronic equipment.

2) Relay Contact

Arc suppression is needed across inductive loads such as solenoids, motors, or even other small relay coils driven by relay contacts. When the contact opens, large electrical spikes are generated. These noise spike, in addition to degrading the relay contact, can radiate off the output lines and into sensitive areas of the equipment. The best way to alleviate this situation is to suppress the spike at the coil itself.

For DC powered coils a simple diode as IN4000 Series placed across the DC coil is usually very effective (cathode-banded side of diode connected at more positive side of coil and anode connected to other side of coil. See Figure B.)

For AC powered coils, an MOV placed across the coil clamps the voltage and usually eliminates the malfunction. Another method to suppress the noise is to place a capacitor across the coil. A .05 to .1 μF ceramic capacitor rated at 3 times the operating voltage will slow down the rise of the spike thus lessening harmful effects. At times a combination of the MOV and capacitor is needed to clamp the voltage and slow down the rise.

3) RFI Noise Through The Air

If electrical noise cannot be suppressed, it is recommended that any electronic equipment be mounted away from the relay coils, solenoids or other noise sources to avoid RFI or EMI caused malfunction.

Often it is sufficient to separate the two by 6" to 12" but metal shielding or separate cases may be necessary where there are strong fields from relay coils, solenoids, welding equipment or large motors.

4) Signal Input Lines

Input signal lines should be run separately from power lines or lines that may have large surges that may couple into the signal lines. They should not be run in the same trough nor bundle as power lines. It is a good practice to run these low current signal lines through shielded cable with the shield tied to DC ground at the source. Tying the shield to earth ground is recommended only if there is still noise interference after the unit is installed. As often as not, the shield connected to ground causes as many problems as it solves. If the shield is tied to earth ground it should be connected at one place, ideally close to the DC ground

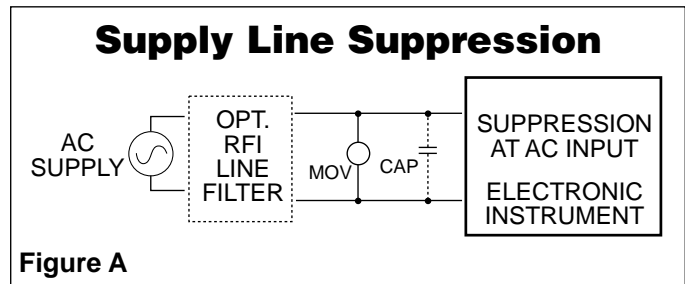


Figure A

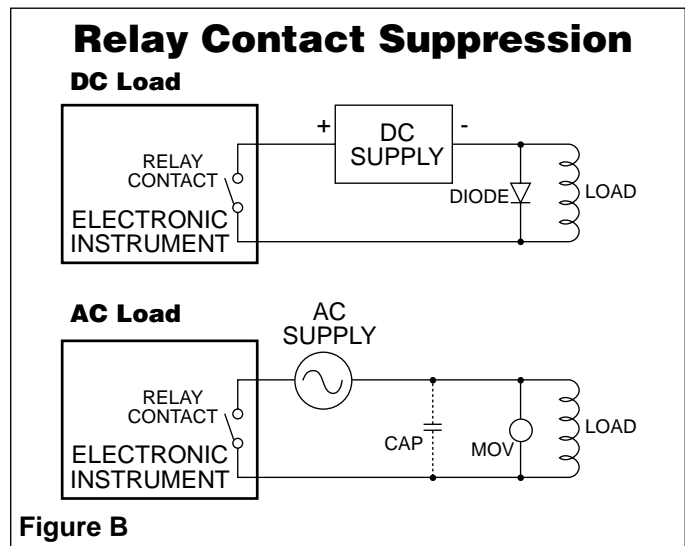


Figure B

Optional Arc Suppressors

Description	KEP#	Industrial Equivalent
Diode IN4005	38012	IN4000 Series
MOV 115 VAC	30090	GE#V130LA10
MOV 230 VAC	30124	GE#V250LA10
.05 μF @ 600V Cap	32013	0.1 to 0.05 μF @ 600V Cap.
RFI Line Filter	N/A	GE#1B1, Corcom#1R1