



A Pentair Company

# Hazardous Locations

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# NEMA 9 Hazardous Location Enclosures



## Application

Designed for use in Class II Division 1 and 2 locations as defined in Article 500 of the National Electrical Code. Class II locations, hazardous due to the presence of combustible dusts, are classified as follows:

Group E—Atmospheres containing combustible metal dusts, including aluminum, magnesium, and their commercial alloys in hazardous concentrations

Group F—Atmospheres containing carbon black, charcoal, or coke dust in hazardous concentrations

Group G—Atmospheres containing combustible dusts such as flour, starch, or grain dusts in hazardous concentrations

Class II enclosures prevent ingress of combustible dust. **Hoffman NEMA 9 enclosures are not suitable for use in locations that are hazardous due to the presence of combustible liquids, vapors, or gases.**

## Construction

- .19 inch (5mm), .25 inch (6mm), and .38 inch (10 mm) steel plate
- Ends are .38 inch (10mm) steel plate to provide a minimum of 3.50 full threads for conduit sizes through 2.00 inch (51mm). (Class II enclosures must have minimum of 3.50 full threads at all conduit entrances. NEMA requires conduit entrances to be in top and/or bottom of enclosure. Tapped holes for conduit should have tapered pipe threads.)
- Covers are .25 inch (6mm) thick to allow mounting of NEMA 9 pushbuttons and pilot lights, which require threaded holes ( $3/4$ -14 NPSM thread)
- Heavy duty cover hinges on enclosures when "A" is 20.00 inches (508mm) or more
- Thick plant fiber gasket, mechanically attached to cover, assures dust-tight enclosure
- Weldnuts or collar studs provided for mounting optional panel

## Finish

ANSI 61 gray polyester powder finish inside and out over phosphatized surfaces. Optional panels are white enamel.

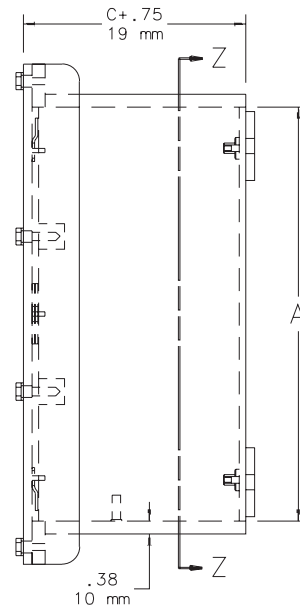
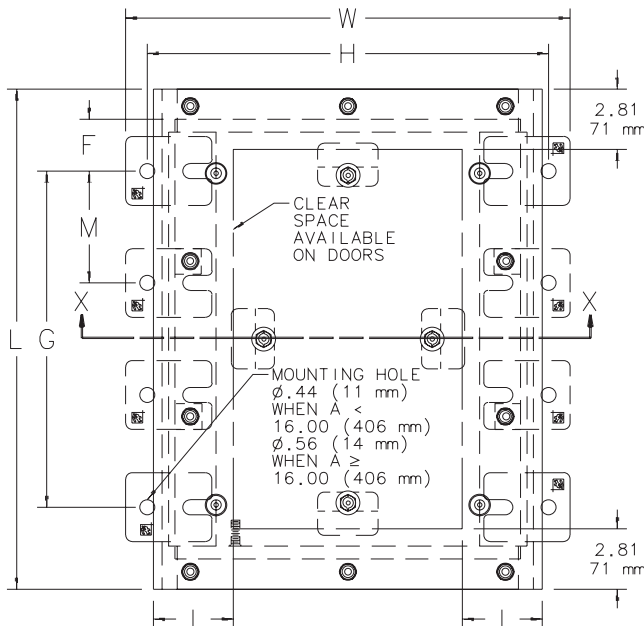
## Industry Standards

- NEMA/EEMAC Type 9
- UL Class II Division 1 and 2 Group E, F, and G locations (Labels are on every enclosure)
- CSA certified for Class II Division 1 and 2 Group E, F, and G locations (Labels are on every enclosure)
- IEC 60529, IP60
- UL File No. E67456
- CSA File No. LRS4836

## Accessories

See also Chapter 12, General Accessories.

- Corrosion Inhibitors
- Electric Heater
- Panel Support Kit
- Panel Support Kit
- Terminal Kit Assembly



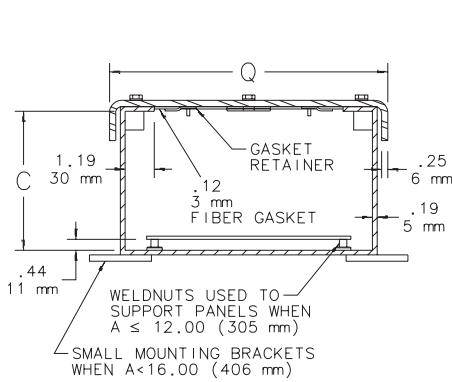
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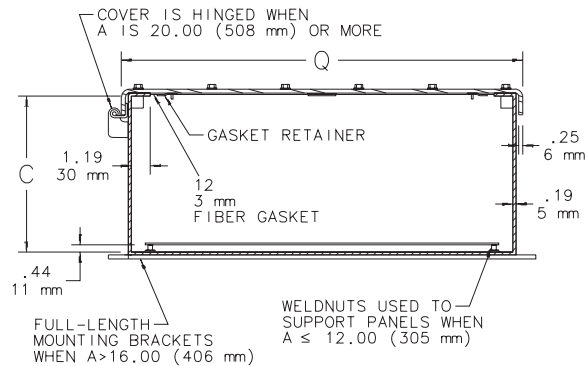
**Standard Sizes NEMA 9 Hazardous Location Enclosures**

Catalog Number	Inside Dimensions A x B x C	Panel Catalog Number	Panel Size D x E	Mounting G x H	Number of Mounting Holes	Overall L x W	I	F	M	Q
A8D64	8.00 x 6.00 x 4.00 (203 x 152 x 102)	A8N6P	6.25 x 4.25 (159 x 108)	5.75 x 7.62 (146 x 194)	4	10.50 x 8.88 (267 x 226)	2.69 (68)	1.50 (38)	—	7.25 (184)
A10D84	10.00 x 8.00 x 4.00 (254 x 203 x 102)	A10N8P	8.25 x 6.25 (210 x 159)	7.75 x 9.62 (197 x 244)	4	12.50 x 10.88 (318 x 276)	2.69 (68)	1.50 (38)	—	9.25 (235)
A12D106	12.00 x 10.00 x 6.00 (305 x 254 x 152)	A12N10P	10.25 x 8.25 (260 x 210)	9.75 x 11.62 (248 x 295)	4	14.50 x 12.88 (368 x 327)	3.50 (89)	1.50 (38)	—	11.25 (286)
A12D128	12.00 x 12.00 x 8.00 (305 x 305 x 203)	A12N12P	10.25 x 10.25 (260 x 260)	9.75 x 13.62 (248 x 346)	4	14.50 x 14.88 (368 x 378)	3.50 (89)	1.50 (38)	—	13.25 (337)
A16D128	16.00 x 12.00 x 8.00 (406 x 305 x 203)	A16P12	13.00 x 9.00 (330 x 229)	13.75 x 13.62 (349 x 346)	4	18.50 x 14.88 (470 x 378)	3.50 (89)	1.50 (38)	—	13.25 (337)
A16D168	16.00 x 16.00 x 8.00 (406 x 406 x 203)	A16P16	13.00 x 13.00 (330 x 330)	13.75 x 17.62 (349 x 448)	4	18.50 x 18.88 (470 x 480)	3.50 (89)	1.50 (38)	—	17.25 (438)
A20D168	20.00 x 16.00 x 8.00 (508 x 406 x 203)	A20P16	17.00 x 13.00 (432 x 330)	14.75 x 17.62 (375 x 448)	4	22.50 x 18.88 (572 x 480)	3.50 (89)	3.00 (76)	—	17.25 (438)
A20D208	20.00 x 20.00 x 8.00 (508 x 508 x 203)	A20P20	17.00 x 17.00 (432 x 432)	14.75 x 21.62 (375 x 549)	4	22.50 x 22.88 (572 x 581)	3.50 (89)	3.00 (76)	—	21.25 (540)
A24D208	24.00 x 20.00 x 8.00 (610 x 508 x 203)	A24P20	21.00 x 17.00 (533 x 432)	18.75 x 21.62 (476 x 549)	4	26.50 x 22.88 (673 x 581)	3.50 (89)	3.00 (76)	—	21.25 (540)
A24D2410	24.00 x 24.00 x 10.00 (610 x 610 x 254)	A24P24	21.00 x 21.00 (533 x 533)	18.75 x 25.62 (476 x 651)	4	26.50 x 26.88 (673 x 683)	3.50 (89)	3.00 (76)	—	25.25 (641)
A30D2410	30.00 x 24.00 x 10.00 (762 x 610 x 254)	A30P24	27.00 x 21.00 (686 x 533)	24.75 x 25.62 (629 x 651)	6	32.50 x 26.88 (826 x 683)	3.50 (89)	3.00 (76)	12.38 (314)	25.25 (641)
A36D2410	36.00 x 24.00 x 10.00 (914 x 610 x 254)	A36P24	33.00 x 21.00 (838 x 533)	30.75 x 25.62 (781 x 651)	6	38.50 x 26.88 (978 x 683)	3.50 (89)	3.00 (76)	15.38 (391)	25.25 (641)
A36D3012	36.00 x 30.00 x 12.00 (914 x 762 x 305)	A36P30	33.00 x 27.00 (838 x 686)	30.75 x 31.62 (781 x 803)	6	38.50 x 32.88 (978 x 835)	3.50 (89)	3.00 (76)	15.38 (391)	31.25 (794)
A48D3612	48.00 x 36.00 x 12.00 (1219 x 914 x 305)	A48P36	45.00 x 33.00 (1143 x 838)	42.75 x 37.62 (1086 x 956)	8	50.50 x 38.88 (1283 x 988)	3.50 (89)	3.00 (76)	14.25 (362)	37.25 (946)

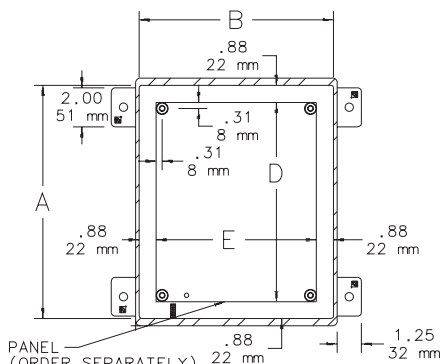
Millimeter dimensions ( ) are for reference only; do not convert metric dimensions to inch.



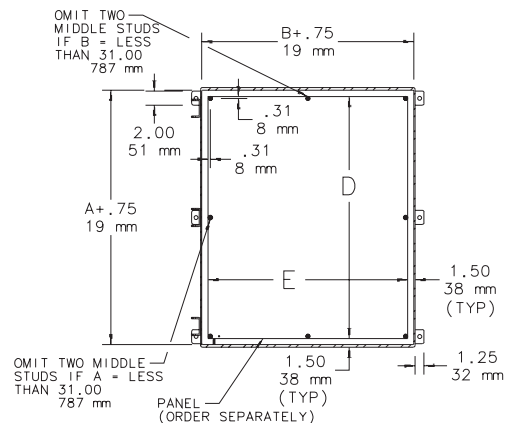
SECTION X-X



SECTION X-X



SECTION Z-Z



SECTION Z-Z

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# Small-Volume Type Y and Z Purging/Pressurization Systems



## Application

Small-volume Type Y and Z purging/pressurization systems are designed for smaller enclosures, up to 2 or 10 cubic feet, based on the type of application. They allow the use of general-purpose enclosures in hazardous (classified) locations (also defined as potentially explosive areas) as an alternative to NEMA Type 7 or 9 enclosures. They can provide a lower-cost protection per cubic foot of enclosure volume. These small-volume systems feature a "universal mount" configuration that allows for either vertical or horizontal mounting to all enclosure surfaces.

A1001YZUMC1 purges enclosures with a volume up to 2 cubic feet maximum. This system is less pressure switch and can be used for Class I applications.

A1001YZUMC2 purges enclosures with a volume up to 10 cubic feet maximum. This system is less pressure switch and can be used for Class II applications.

## Construction

- Universal mount
- Available in two models for enclosures with a maximum enclosure volume of up to 2 or 10 cubic feet
- Mounting plate: Type 316 brushed stainless steel
- Regulator body: zinc with enamel finish
- Enclosure pressure gauge: aluminum with enamel finish
- Polycarbonate regulator handle
- Fastener hardware available in aluminum and stainless steel

## Industry Standards

For A1001YZUMC1  
 NEC Type Y Class I, Division 1, Groups A, B, C, and D to Division 2  
 NEC Type Z Class I, Division 2, Groups A, B, C, and D to Unclassified  
 Classified by Underwriters Laboratories, cUL, and Factory Mutual

For A1001YZUMC2  
 NEC Type Y Class II, Division 1, Groups F and G to Division 2  
 NEC Type Z Class II, Division 2, Groups F and G to Unclassified  
 Classified by Underwriters Laboratories, cUL, and Factory Mutual

## Protected Enclosures

Enclosures should be constructed from materials such as metal or polycarbonate material to meet or exceed NEMA Type 4, Type 4X, or Type 12 performance requirements.

## Modification Services Program

You can customize the enclosures you order with these products to your unique requirements by specifying from these options:

- Holes and cutouts for mounting system

For details, see Modification Services at [www.hoffmanonline.com](http://www.hoffmanonline.com). To order, contact your local Hoffman sales representative.

## Class Ratings

Classes define the explosive or ignitable substances that are present in the atmosphere.

- Class I Flammable gases or liquid vapors
- Class II Ignitable metal, carbon, or organic dusts
- Class III Ignitable fibrous materials

## Group Ratings

Groups define substances by rating their explosive or ignitable nature in relation to other known substances.

### Typical Class I Substances

- Group A Acetylene
- Group B Hydrogen or >30% hydrogen by volume
- Group C Ethyl, ether, and ethylene

### Typical Class II Substances

- Group E Aluminum, magnesium, and alloys
- Group F Carbon, coke, and coal
- Group G Flour, grain, wood, plastic, and chemicals

## Division Ratings

Divisions define the degree of hazard by determining an explosive or ignitable substance's expected concentration in the atmosphere.

- Division 1 Contains substances under normal conditions
- Division 2 Contains substances under abnormal conditions

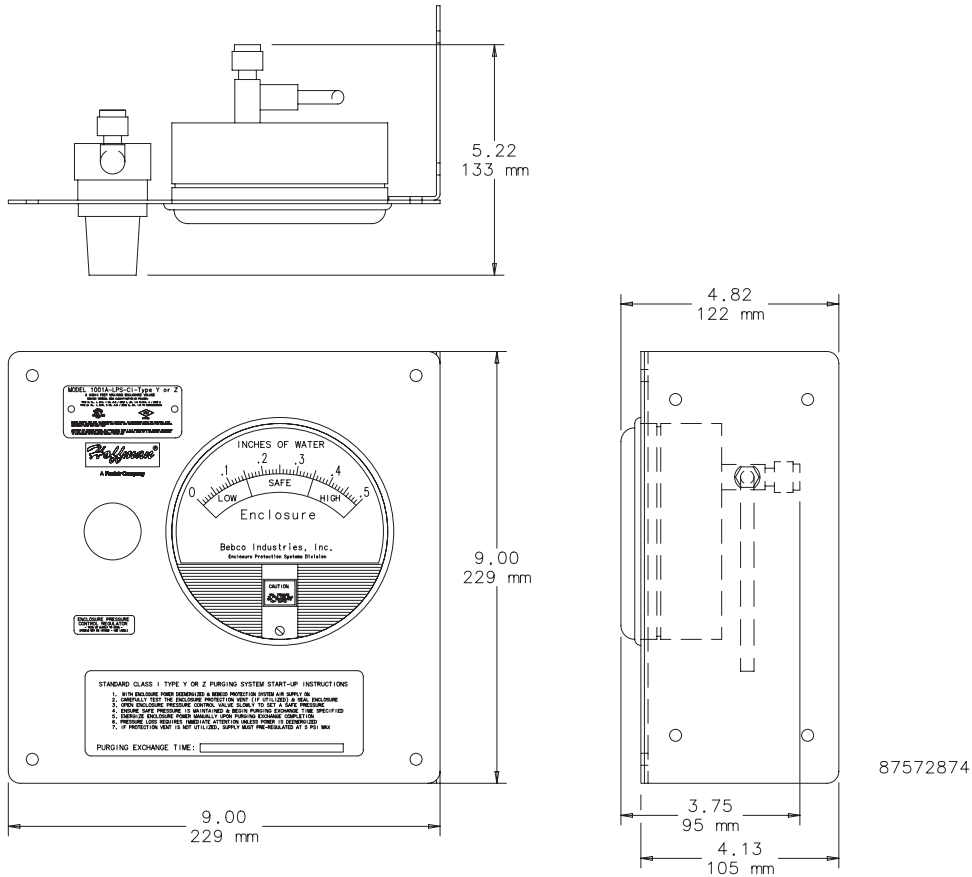
## Important Notes

Division 1 areas must be surrounded by Division 2 areas.

Class II, Group E areas must be rated as Division 1 areas.



■ Model 1001 Configuration System & Flange Dimensions



**Standard Sizes Small-Volume Type Y and Z Purge/Pressurization Systems (Model 1001)**

Catalog Number	Height		Width		Depth		Weight lbs.	Maximum Enclosure Volume
	in.	mm	in.	mm	in.	mm		
A1001YZUMC1	9	228.6	9	228.6	5	127	8.25	2 cubic feet
A1001YZUMC2	9	228.6	9	228.6	5	127	8.50	10 cubic feet



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# Large-Volume Type Y and Z Purging/Pressurization Systems



Purging/pressurization components can be mounted vertically or horizontally.

## Application

Hoffman's purge/pressurization systems allow the use of general-purpose enclosures in some hazardous locations. These products are designed to supply one or more enclosures with a protective gas supply. Purge/pressurization systems can be used for electronics, electrical equipment, motors, and switch gear in wall-mount to large enclosures. Purge/pressurization systems also meet the demands of rack-mounted instrumentation, video displays, programmable controllers, computers, printers, recorders, and measurement and calibration equipment.

Protected under U.S. Patent #5,101,710

## Construction/Finish

- Vertical mount (VM), horizontal mount (HM), or component kit (CK)
- Available in two models: 90 cubic feet or 250 cubic feet maximum enclosure volume
- System face plate and mounting plate: Type 316 stainless steel tumble finish (VM and HM only)
- Regulator body: zinc with enamel finish
- Manifold body: anodized aluminum with Type 316 stainless steel valves
- Enclosure pressure gauge: aluminum with enamel finish
- Gas supply gauge: poly case and nickel plated tube
- Enclosure protection vent
- Enclosure supply and enclosure reference bulkhead fittings: Type 316 stainless steel
- Fastener hardware available in aluminum and stainless steel

## Industry Standards

NEC Type Y Class 1, Division 1, Groups A, B, C, and D / Zone 1 Groups IIA, IIB, and IIC to Division 2 / Zone 2  
NEC Type Z Class 1, Division 2, Groups A, B, C, and D / Zone 2 Groups IIA, IIB, and IIC to Nonhazardous  
Classified by Underwriters Laboratories, NFPA 496-1993  
ATEX Directive, 94/9/EC  
EN 50021:1999  
IEC 60079-15 (FDIS)  
IEC 60079-2 Ed. 4.0  
Epsilon Certification Services Certificate No.: Ex 00ATEX1056

## Protected Enclosures

Enclosures should be constructed from materials such as metal or polycarbonate material to meet or exceed NEMA Type 4 or Type 12 performance requirements.

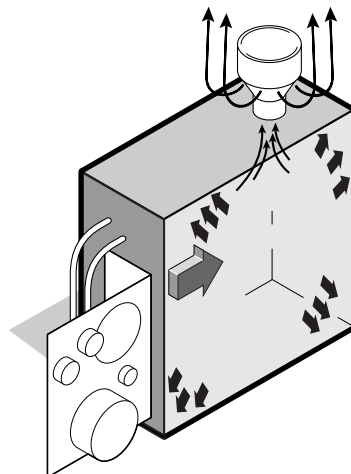
## Modification Services Program

You can customize the enclosures you order with these products to your unique requirements by specifying from these options:

- Holes and cutouts for mounting the system

For details, see Modification Services at [hoffmanonline.com](http://hoffmanonline.com).

To order, contact your local Hoffman sales representative.

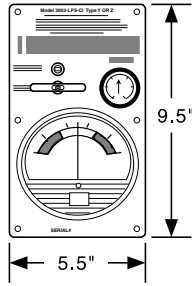




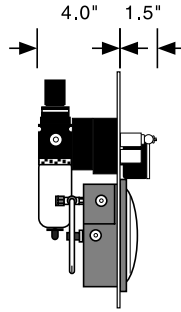
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# Large-Volume Type Y and Z Purging/Pressurization Systems

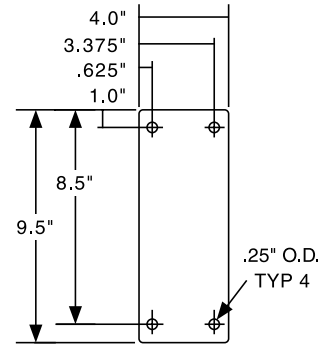
## ■ Model 3003 VM Configuration System & Flange Dimensions



**VM Configuration  
Front View**

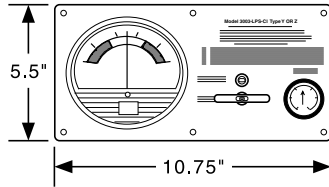


**VM Configuration  
Side View**

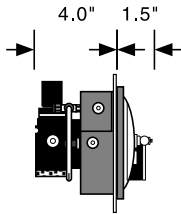


**Vertical Mount Flange  
Front View**

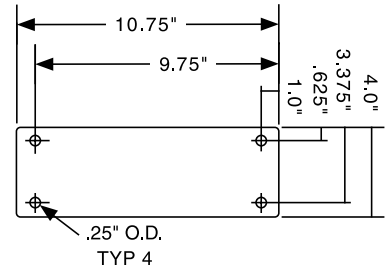
## ■ Model 3003 HM Configuration System & Flange Dimensions



**HM Configuration  
Front View**



**HM Configuration  
Side View**



**Horizontal Mount Flange  
Front View**