# NEMA Enclosures For Every Application

***You've invested time, talent, and money in your control system. Protect it with a quality enclosure.***

A quality enclosure in an industrial environment not only maintains a better appearance over time, it also does a better job protecting the components in it.

## What is a NEMA enclosure?

NEMA enclosures meet the National Electrical Manufacturers Association standards for performance and protection of the electrical equipment installed within them. NEMA enclosures range in size from small pushbutton boxes to room-size panels. Enclosures are given a NEMA rating according to the types of applications the enclosure serves.

## What are NEMA enclosures used for?

NEMA enclosures house all kinds of electrical components from simple terminal blocks, to industrial automation systems, to high voltage switchgear. In industrial automation systems, NEMA enclosures often house motor controls, drives, PLC/PC control systems, pushbuttons, and termination systems. Some enclosures are configured to be operator consoles, while others are designed with flanges for mounting disconnects.

## Do we have the enclosure you need?

AUTOMATIONDIRECT offers over 1,800 enclosure part numbers across NEMA 1, 3, 3R, 3S, 4, 4X, 5, 6, 6P, 12, and 13 standards.

AUTOMATIONDIRECT has teamed up with two enclosure manufacturers to offer you quality NEMA enclosures at great prices.

Our wide selection of quality Wiegmann or Integra enclosures should allow you to find the perfect one for your industrial automation application.

HUBBELL®

WIEGMANN®

Wiegmann is one of the largest enclosure manufacturers in North America. Their enclosure line includes a wide variety of carbon steel, galvanized steel, stainless steel, aluminum and fiberglass enclosures, including enclosures for disconnects, pushbuttons, and operator consoles.

We offer same-day shipping on select enclosure models and accessories direct from the Wiegmann manufacturing facility in Freeburg, IL. Other sizes and products can be shipped within 15 business days.

We also offer customization of a limited number of Wiegmann enclosures. This service is available only through the AUTOMATIONDIRECT web store, and only to registered users.

INTEGRA ENCLOSURES

Integra is a manufacturer of top-quality polycarbonate enclosures that are well suited for a wide range of outdoor applications, such as remote monitoring, alternative energy, water treatment, and marine and marina.

All Integra enclosures are stocked at AUTOMATIONDIRECT for same-day shipping.

Both Wiegmann and Integra offer a full line of subpanels and accessories to allow you to tailor your enclosure to your application.

## 30-day money-back guarantee

Order with the assurance of our unconditional 30-day money-back guarantee on enclosures. See terms and conditions for details.

# How to Select Your Enclosure

## 1. What kind of environment is your enclosure going to be in and what level of protection do you need?

Your enclosure's primary function is to protect the equipment inside it from the surrounding environment. Therefore, you need to understand the environment where the enclosure will be located and select the appropriate level of protection.

An enclosure's level of protection is defined by its NEMA rating. Refer to "What Do the NEMA Ratings Mean?" later in this section for more information.

Keep in mind that it is just as important not to over-specify the protection level of your enclosure as it is to under-specify, as increasing the protection level typically increases the cost of the enclosure.

## 2. Determine your security requirements.

Your enclosure may also need to protect its contents from unauthorized access to the components it houses.

AutomationDirect has options to meet a wide variety of security needs. For low-risk installations, a screw cover, lift-off cover, or single-door with clamps may be sufficient. In higher risk installations, an enclosure with keylocking and/or padlocking capabilities may be needed.

If you cannot find a stock enclosure with the security features that you need, AutomationDirect offers replacement locks and latches that you can retrofit to your enclosure.

## 3. Determine the size enclosure you need.

Physical space for your components is not the only requirement. Considerations like heat dissipation and venting must be taken into account.

First, determine the height and width for your enclosure by laying out the footprint space needed for your control components on a standard subpanel size. Remember to consider the mounting holes for the subpanel when planning the required footprint space. The size of the enclosure will determine if you need a single-door, two-door, or wall-mount. The height and width of your enclosure will determine whether it should be a wall-mount, floor-mount, or freestanding enclosure.

Next, you'll need to determine your panel depth. Remember that the subpanel mounting takes up a small portion of the depth. Also, any pushbuttons, operator interfaces, indicators, meters, etc., that you plan to mount on the enclosure door will occupy some enclosure depth.

Finally, you must allow for heat dissipation [see step 4]. If you have estimated component sizes or heat generation, it's always better to oversize the enclosure when you have the available space.

For assistance in finding the enclosure series that meets your needs, refer to the "Enclosure Attributes" chart later in this section.

## 4. Determine your thermal management needs.

Your enclosure must be able to dissipate the heat generated by the components inside of it either alone or by adding a cooling device. You might be able to side-step additional cooling by upsizing your enclosure to increase the surface area through which heat is transferred to the atmosphere.

If additional cooling is required, AutomationDirect has many devices to choose from. But always remember that the heat dissipation method you select must be compatible with the enclosure's NEMA rating.

For some applications, a simple louver plate will provide adequate heat dissipation. A fan kit and louver combination is your next most economical ventilation option. For small enclosures, a vortex cooler using compressed air is another option. A sealed enclosure may require a heat exchanger or an air conditioner controlling the internal temperature without introducing outside air and its contaminants.

If you need help with these calculations, go to http://support.automationdirect.com/notes/enclosure_environment.html.

An enclosure may also require heating where environmental conditions are conducive to condensation and/or ice formation inside the enclosure.

Unfortunately, we cannot make these determinations for you as all control applications are different. Conservative choices increase your margin of safety and allow for future changes.

## 5. Choose your accessories.

AutomationDirect offers a wide range of accessories for our enclosures.

- Subpanels - our enclosures do not come with subpanels unless specified in the product description.
- Mounting alternatives - floor stand kits, mounting feet, casters, and pole-mounting kits
- Drip shields for outdoor enclosures
- Window kits
- Folding shelves
- Hole seals and hole plugs
- Adapter plates for disconnects
- Grounding accessories
- Replacement locks and latches
- Electrical interlocks
- Print pockets
- Panel-mounting accessories - swing-out panel kits, adjustable depth-mounting kits, panel supports for heavily-loaded panels, and dead front kits
- Frames, channels and rails for rack-mounted equipment
- Terminal brackets and straps, mounting channels, grid straps, and DIN-rails
- Touch-up paint
- Replacement gaskets

# What Do The NEMA Ratings Mean?

The National Electrical Manufacturers Association (NEMA) is a US Manufacturers Organization which actively promotes standardized product specifications for electrical apparatus. While NEMA does not actually test products, it establishes the performance criteria for enclosures intended for specific environments.

NEMA standards describe each type of enclosure in general and functional terms, and specifically omits reference to construction details. In other words, NEMA specifies what an enclosure must do, not how to manufacture it. This is also true about the EN 60.529/IEC 529.

NEMA performance criteria and test methods are used by Underwriters Laboratories (UL) and the Canadian Standards Association (CSA) as guidelines for investigation and listing of electrical enclosures. The tested enclosures are then authorized to carry a label by UL or CSA to prove it has passed the required tests and meets the applicable UL and CSA standard.

## NEMA Classifications

**NEMA 1** enclosures are typically used for protecting controls and terminations from objects and personnel. This style of enclosure, while offering a latching door, does not have a gasketed sealing surface. NEMA 1 enclosures are used in applications where sealing out dust, oil, and water is not required.

**NEMA 2** enclosures are intended for indoor use primarily to provide a degree of protection against limited amounts of falling water and dirt.

**NEMA 3** enclosures are intended for outdoor use primarily to provide a degree of protection against windblown dust, rain, sleet, and external ice formation.

**NEMA 3R** enclosures are typically used in outdoor applications for wiring and junction boxes. This style of enclosure provides protection against falling rain, sleet, snow, and external ice formation. Indoors they protect against dripping water. This style of enclosure does not have a gasketed sealing surface. Some models have hasps for padlocking.

**NEMA 3S** enclosures are intended for outdoor use primarily to provide a degree of protection against windblown dust, rain, sleet, and to provide for operation of external mechanisms when ice laden.

**NEMA 4** enclosures are used in many applications where an occasional washdown occurs or where machine tool cutter coolant is used. They also serve in applications where a pressurized stream of water will be used. NEMA 4 enclosures are gasketed and the door is clamped for maximum sealing.

**NEMA 4X** enclosures are made of stainless steel, aluminum, fiberglass, or polycarbonate. NEMA 4X enclosures are used in harsh environments where corrosive materials and caustic cleaners are used. Applications include food, such as meat/poultry processing facilities, where total washdown with disinfectants occur repeatedly, and petro-chemical facilities, including offshore petroleum sites.

**NEMA 5** enclosures are intended for indoor use primarily to provide a degree of protection against settling airborne dust, falling dirt, and dripping non-corrosive liquids.

**NEMA 6** enclosures are intended for indoor or outdoor use primarily to provide a degree of protection against the entry of water during occasional, temporary submersion at a limited depth.

**NEMA 6P** enclosures are intended for indoor or outdoor use primarily to provide a degree of protection against the entry of water during prolonged submersion at a limited depth.

**NEMA 11** enclosures are intended for indoor use primarily to provide, by oil submersion, a degree of protection to enclosed equipment against the corrosive effects of liquids and gases.

**NEMA 12** enclosures are intended for indoor use to provide a degree of protection against drips, falling dirt, and dripping non-corrosive liquids. NEMA 12 enclosures are most commonly used for indoor applications of automation control and electronic drives systems, including packaging, material handling, non-corrosive process control, and manufacturing applications. Gasketed doors seal the enclosure's contents from airborne contaminants and non-pressurized water and oil.

**NEMA 12K** enclosures with knock-outs are intended for indoor use primarily to provide a degree of protection against dust, falling dirt, and dripping non-corrosive liquids other than at knock-outs.

**NEMA 13** enclosures are intended for indoor use primarily to provide a degree of protection against dust, spraying of water, oil, and non-corrosive coolant.

# What Do The NEMA Ratings Mean?

## Comparison of Non-Hazardous Applications for Indoor Locations

| Provides a Degree of Protection Against the Following Environmental Conditions | Enclosure NEMA Type | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1* | 2* | 4 | 4X | 5 | 6 | 6P | 11 | 12 | 12K | 13 |
| ***Incidental contact with the enclosed equipment*** | X | X | X | X | X | X | X | X | X | X | X |
| ***Falling dirt*** | X | X | X | X | X | X | X | X | X | X | X |
| ***Falling liquids and light splashing*** | | X | X | X | | X | X | X | X | X | X |
| ***Dust, lint, fibers, and flyings*** | | | X | X | X | X | X | | X | X | X |
| ***Hose down and splashing water*** | | | X | X | | X | X | | | | |
| ***Oil and coolant seepage*** | | | | | | | | | X | X | X |
| ***Oil or coolant spraying and splashing*** | | | | | | | | | | | X |
| ***Corrosive agents*** | | | | X | | | X | X | | | |
| ***Occasional temporary submersion*** | | | | | | X | X | | | | |
| ***Occasional prolonged submersion*** | | | | | | | X | | | | |

***These enclosures may be ventilated. However, Type 1 may not provide protection against small particles of falling dirt when ventilation is provided in the enclosure top.***

## The European IP Code

European Union members use the EN60.529/IEC 529 standard to classify an enclosure's protection against various hazards. This system has been adopted by many other countries outside of Europe. The ingress protection (IP) system uses a two-digit code to describe the enclosure's protection capabilities. The first digit signifies the protection level against solid objects, including dust. The second digit represents the enclosure's degree of protection against ingress of water. The two-digit code is preceded by the prefix "IP."

The cross-referenced table on the next pages is an approximate comparison of NEMA and International Electrotechnical Commission (IEC) classifications. It is offered for reference only. Please consult the appropriate standards for a full description of the requirements for each classification.

## NEMA to IEC - Enclosure Rating Cross Reference*

| NEMA Type | IP23 | IP30 | IP32 | IP55 | IP64 | IP65 | IP66 | IP67 |
|---|---|---|---|---|---|---|---|---|
| ***1*** | X | | | | | | | |
| ***2*** | | X | | | | | | |
| ***3*** | | | | | X | | | |
| ***3R*** | | | X | | | | | |
| ***4*** | | | | | | | X | |
| ***4X*** | | | | | | | X | |
| ***6*** | | | | | | | | X |
| ***12*** | | | | X | | | | |
| ***13*** | | | | | | X | | |

*Note: This cross-reference table is an approximation of NEMA and IEC classifications for reference only. Please consult the appropriate agency's requirements and test qualifications for complete information.

# Enclosure Attributes

| Enclosure Attributes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Enclosure Series | Special Types | | | NEMA Classification | | | | | | | | | | | | Mounting | | | | Material | | | | | | Door/Cover | | | | | | | | | | Other Options/ Features | | | | | |
| | Disconnects | Pushbuttons | Operator Consoles | NEMA 1 | NEMA 2 | NEMA 3 | NEMA 3R | NEMA 3S | NEMA 4 | NEMA 4X | NEMA 5 | NEMA 6 | NEMA 6P | NEMA 12 | NEMA 13 | Wall Mount | Flush Mount | Floor Mount | Freestanding | Carbon Steel | Galvanized Steel | Stainless Steel | Aluminum | Fiberglass (FRP) | Polycarbonate | Screw Cover | Hinged Screw Cover | Screw Cover with Handle | Lift-off Cover | Single Door | Clear Cover | Double Door | Multi-door | Knockouts | Dual Access | Slope Top | Window | 3-point Latch | Customizable |
| **Wiegmann** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ABN12 | X | | | | | | | | | | | | | X | X | X | | | | X | | | | | | | | | X | | | | | | | | | | | |
| B | | | | | | | | | | | | | | X | X | X | | | | X | | | | | | | | X | | | | | | | | | | | | |
| B_CH | | | | | | | | | | | | | | X | X | X | | | | X | | | | | | | | | X | | | | | | | | | | | |
| B_SC | | | | | | | | | | | | | | X | X | X | | | | X | | | | | | X | | | | | | | | | | | | | | |
| BN4 | | | | | | | | | X | | | | | X | X | X | | | | X | | | | | | | | X | | | | | | | | | | | | |
| BN4_AL | | | | | | | | | X | X | | | | X | X | X | | | | | | | X | | | | | X | | | | | | | | | | | | |
| BN4_CH | | | | | | | | | X | | | | | X | X | X | | | | X | | | | | | | | | X | | | | | | | | | | | |
| BN4_CHAL | | | | | | | | | X | X | | | | X | X | X | | | | | | | X | | | | | | X | | | | | | | | | | | |
| BN4_CHSS | | | | | | | | | X | X | | | | X | X | X | | | | | | X | | | | | | | X | | | | | | | | | | | |
| BN4_SS | | | | | | | | | X | X | | | | X | X | X | | | | | | X | | | | | | X | | | | | | | | | | | | |
| CT | | | | | | | X | | | | | | | | | X | | | | X | | | | | | | | | X | | X | | | | | | | | | |
| HW_CHQR | | | | X | | X | | X | | X | | | | X | X | X | | | | | | | | X | | | | | X | | | | | | | | | | | |
| HW_CHQTD | | | | X | | X | | | | X | | | | X | | X | | | | | | | | X | | | | | X | | | | | | | | | | | |
| HW_CHSC | | | | X | | X | | X | | X | | | | X | X | X | | | | | | | | X | | | X | | | | | | | | | | | | | |
| HW-CHQRW | | | | X | | X | | X | | X | | | | X | X | X | | | | | | | | X | | | | | X | | | | | | | | X | | | |
| HW_CHTL | | | | X | | X | | X | | X | | | | X | X | X | | | | | | | | X | | | | | X | | | | | | | | | | | |
| HW_CHTLW | | | | X | | X | | X | | X | | | | X | X | X | | | | | | | | X | | | | | X | | | | | | | | X | | | |
| HW_SC | | | | X | | X | | X | | X | | | | X | X | X | | | | | | | | X | | X | | | | | | | | | | | | | | |
| HW-CC_CHQR | | | | X | | X | | X | | X | | | | X | X | X | | | | | | | | X | | | | | X | X | | | | | | | | | |
| HW-CC_CHSC | | | | X | | X | | X | | X | | | | X | X | X | | | | | | | | X | | | X | | | X | | | | | | | | | |
| HW-CC_CHTL | | | | X | | X | | X | | X | | | | X | X | X | | | | | | | | X | | | | | X | X | | | | | | | | | |
| HW-J_3PT | | | | X | | X | X | | X | X | | | | X | X | X | | | | | | | | X | | | | | X | | | | | | | | | X | |
| HW-J_CHQR | | | | X | | | X | | | X | | | X | X | | X | | | | | | | | X | | | | | X | | | | | | | | | | |
| HW-J_CHQRW | | | | X | | | X | | | X | | | X | X | | X | | | | | | | | X | | | | | X | | | | | | | | X | | |
| HW-J_CHSC | | | | X | | | X | | | X | | | X | X | | X | | | | | | | | X | | | X | | | | | | | | | | | | |
| HW-J_CHTL | | | | X | | | X | | | X | | | X | X | | X | | | | | | | | X | | | | | X | | | | | | | | | | |
| HW-J_CHTLW | | | | X | | | X | | | X | | | X | X | | X | | | | | | | | X | | | | | X | | | | | | | | X | | |
| HW-J_SC | | | | X | | | X | | | X | | | X | X | | X | | | | | | | | X | | X | | | | | | | | | | | | | | |
| HW-J_XD | | | | X | | | X | | | X | | | | X | | X | | | | | | | | X | | | | | X | | | | | | | | | | |
| HW-N3R_CH | | | | X | | | X | | | | | | | | | X | | | | | | | | X | | | | | X | | | | | | | | | | |
| HW-N4X | | | | X | | | X | | | X | | | X | X | | X | | | | | | | | X | | X | | | | | | | | | | | | | | |
| HW-N4X_CH | | | | X | | X | X | | | X | | | | X | | X | | | | | | | | X | | | | | X | | | | | | | | | | |
| HW-N4X_CHW | | | | X | | | | | | X | | | | X | | X | | | | | | | | X | | | | | X | | | | | | | | X | | |
| HW-N4X_PB | | X | | X | | X | | | | X | | | X | X | | X | | | | | | | | X | | X | | | | | | | | | | | | | | |
| HW-RHJ_CHQR | | | | X | | | X | | | X | | | X | X | | X | | | | | | | | X | | | | | X | | | | | | | | | | |
| HW-RHJ_CHQRW | | | | X | | | X | | | X | | | X | X | | X | | | | | | | | X | | | | | X | | | | | | | | X | | |

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# Enclosure Attributes

| Enclosure Attributes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Enclosure Series | Special Types | | | NEMA Classification | | | | | | | | | | | | Mounting | | | | Material | | | | | | Door/Cover | | | | | | | | Other Options/ Features | | | | | |
| | Disconnects | Pushbuttons | Operator Consoles | NEMA 1 | NEMA 2 | NEMA 3 | NEMA 3R | NEMA 3S | NEMA 4 | NEMA 4X | NEMA 5 | NEMA 6 | NEMA 6P | NEMA 12 | NEMA 13 | Wall Mount | Flush Mount | Floor Mount | Freestanding | Carbon Steel | Galvanized Steel | Stainless Steel | Aluminum | Fiberglass (FRP) | Polycarbonate | Screw Cover | Hinged Screw Cover | Screw Cover with Handle | Lift-off Cover | Single Door | Clear Cover | Double Door | Multi-door | Knockouts | Dual Access | Slope Top | Window | 3-point Latch | Customizable |
| **Wiegmann** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| HW-RHJ_CHSC | | | | X | | | X | | | X | | | X | X | | X | | | | | | | | X | | | | | | | | | | | | | | |
| HW-RHJ_SC | | | | X | | | X | | | X | | | X | X | | X | | | | | | | | X | X | | | | | | | | | | | | | |
| HW-RHJ_CHTL | | | | X | | | X | | | X | | | X | X | | X | | | | | | | | X | | | | | X | | | | | | | | | |
| HW-RHJ_CHTLW | | | | X | | | X | | | X | | | X | X | | X | | | | | | | | X | | | | | X | | | | | | X | | | |
| HW-WHJ_CHQR | | | | X | | | X | | | X | | | X | X | | X | | | | | | | | X | | | | | X | | | | | | | | | |
| HW-WHJ_CHSC | | | | X | | | X | | | X | | | X | X | | X | | | | | | | | X | | X | | | | | | | | | | | | |
| JIC | | | | | | | | | | | | | | X | X | X | | | | X | | | | | X | | | | | | | | | | | | | | |
| N12 (width<36 in.) | | | | | | | | | | | | | | X | X | X | | | | X | | | | | | | | | | X | | | | | | | | |
| N12 (width>36 in.) | | | | | | | | | | | | | | X | | | | X | | X | | | | | | | | | | | X | | | | | | X | |
| N1C | | | | X | | | | | | | | | | | | X | | | | X | | | | | | | | | | X | | | | | | | | |
| N4 | | | | | | | | | X | | | | | X | X | X | | | | X | | | | | | | | | | X | | | | | | | | |
| N412_C/CLG | | | | | | | | | X | | | | | X | X | X | | | | X | | | | | | | | | | X | | | | | | X | X | X | X |
| N412_CD | X | | | | | | | | X | X | | | | X | X | X | | | | X | | X | | | | | | | | X | | | | | | | X | |
| N412_SSC/SSIC | | | | | | | | | X | X | | | | X | X | X | | | | | | X | | | | | | | | X | | | | | X | X | X | |
| N4D | | | | | | X | | | X | | | | | X | | | | X | | X | | | | | | | | | | | X | | | | | | X | |
| N4S | | | | | | X | | | X | | | | | X | | | | | X | X | | | | | | | | | | X | | | | | | | | |
| N4S_FSSS | | | | | | X | | | X | X | | | | X | | | | | X | | | X | | | | | | | | X | | | | | | | | |
| PB | | X | | | | | | | X | | | | | X | X | X | | | | X | | | | | | X | | | | | | | | | | | | |
| PBGX | | X | | | | | | | | | | | | X | X | X | | | | X | | | | | | X | | | | | | | | | | | | |
| PBSS | | X | | | | | | | X | X | | | | X | X | X | | | | | | X | | | | X | | | | | | | | | | | | |
| PBXD | | X | | | | | | | X | | | | | X | X | X | | | | X | | | | | | X | | | | | | | | | | | | |
| PBXD_SS | | X | | | | | | | X | X | | | | X | X | X | | | | | | X | | | | X | | | | | | | | | | | | |
| PBYX | | X | | | | | | | | | | | | X | X | X | | | | X | | | | | | X | | | | | | | | | | | | |
| PSL | | X | | | | | | | | | | | | X | X | X | | | | X | | | | | | X | | | | | | | | | | | | |
| RHC | | | | X | | | X | | | | | | | | | X | | | | X | | | | | | | | | | X | | | | X | | | | |
| RSC | | | | X | | | X | | | | | | | | | X | | | | X | X | | | | | X | | | | | | | | X | | | | |
| SC | | | | X | | | | | | | | | | | | X | | | | X | X | | | | | X | | | | | | | | X | | | | |
| SDN_PL | X | | | | | | | | | | | | | X | X | X | | | | X | | | | | | | | | | X | | | | | | | | |
| SN4 | X | | | | | X | | | X | | | | | X | X | X | | | | X | | | | | | | | | | X | | | | | | | | |
| SSN4 | | | | | | | | | X | X | | | | X | X | X | | | | | | X | | | | | | | | X | | | | | | | X | |
| SSN4_WF3PT | | | | | | | | | X | X | | | | X | | X | | | | | | X | | | | | | | | | X | | | | | | X | |
| SSN4D | | | | | | | | | X | X | | | | X | | | | X | | | | X | | | | | | | | | X | | | | | | X | |
| SSN4X | X | | | | | | | | X | X | | | | X | X | X | | | | | | X | | | | | | | | X | | | | | | | | |
| W1C | | | X | | | | | | | | | | | X | X | | | | X | X | | | | | | | | | | X | | | | | | | X | |

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# Enclosures Attributes

| Enclosure Attributes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Enclosure Series | Special Types | | | NEMA Classification | | | | | | | | | | | | Mounting | | | | Material | | | | | | Door/Cover | | | | | | | | | Other Options/ Features | | | | | |
| | Disconnects | Pushbuttons | Operator Consoles | NEMA 1 | NEMA 2 | NEMA 3 | NEMA 3R | NEMA 3S | NEMA 4 | NEMA 4X | NEMA 5 | NEMA 6 | NEMA 6P | NEMA 12 | NEMA 13 | Wall Mount | Flush Mount | Floor Mount | Freestanding | Carbon Steel | Galvanized Steel | Stainless Steel | Aluminum | Fiberglass (FRP) | Polycarbonate | Screw Cover | Hinged Screw Cover | Screw Cover with Handle | Lift-off Cover | Single Door | Clear Cover | Double Door | Multi-door | Knockouts | Dual Access | Slope Top | Window | 3-point Latch | Customizable |
| **Wiegmann** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WA_CPX_SSN4 | X | | | | | | | | X | X | | | | X | | | | X | | | X | | | | | | | | | X | | | | | | X | |
| WA_CPX_U | X | | | | | | | | | | | | | X | | | | X | | X | | | | | | | | | | | X | | | | | | X | |
| WA_FM | | | | | | | | | | | | | | X | X | | X | | | X | | | | | | | | | | X | | | | | | | | |
| WA_FS | | | | | | | | | | | | | | X | | | | | X | X | | | | | | | | | | X | | X | | | X | | | X | |
| WA_FSDSS | | | | | | | | | | | | | | X | | | | X | | | X | | | | | | | | | | | X | | | | | | X | |
| WA_FSN4 | | | | | | X | | | X | | | | | X | | | | X | X | | | | | | | | | | | X | | | | | | | | X | |
| WA_FSSS | | | | | | | | | | | | | | X | | | | X | | | X | | | | | | | | | X | | | | | | | | X | |
| WA_GIE | | | | | | | | | | | | | | X | X | X | | | | X | | | | | | | X | | | | | | | | | | | | X | |
| WA_GSC | | | | | | X | | | X | | | | | | | X | | | | X | X | | | | X | | | | | | | | | | | | | | | |
| WA_SSFSDN43PT | | | | | | | | | X | X | | | | X | | | | X | | | X | | | | | | | | | | X | | | | | | | X | |
| WA_SSFSN43PT | | | | | | X | | | X | X | | | | X | | | | X | | | X | | | | | | | | X | | | | | | | | | X | |
| WA_WF | | | | | | | | | | | | | | X | | X | | | | X | | | | | | | | | | | X | | | | | | | X | |
| WA_X_SSN4 | X | | | | | | | | X | X | | | | X | | | | X | | | X | | | | | | | | | | X | | | | | | | X | |
| WA_X_U | X | | | | | | | | | | | | | X | | | | X | | X | | | | | | | | | | | X | | | | | | | X | |
| WA_XM_SSN4 | X | | | | | | X | | X | X | | | | X | | | | | | X | | X | | | | | | | X | | X | | | | | | | X | |
| WA_XM_U | X | | | | | | | | | | | | | X | | | | X | | X | | | | | | | | | X | | X | X | | | | | | X | |
| WA86M | | | | | | | | | | | | | | X | | | | X | | X | | | | | | | | | | | | X | | | | | | X | |
| WC_C | | | X | | | | | | | | | | | X | X | | | | | X | | | | | | | | | | X | | | | | | | | | |
| WC_CSS | | | X | | | | | | | | | | | X | X | | | | | | | X | | | | | | | | X | | | | | | | | | |
| WC10 | | | X | | | | | | | | | | | X | X | | | | X | X | | | | | | | | | | X | | | | | | | | X | |
| WC12 | | | X | | | | | | | | | | | X | X | | | | X | X | | | | | | | | | | X | | X | | | | | | X | |
| WC14 | | | X | | | | | | | | | | | X | X | | | | X | X | | | | | | | | | | X | | X | | | | | | X | |
| WC9 | | | X | | | | | | | | | | | X | X | | | | X | X | | | | | | | | | | X | | | | | | | | X | |
| WCT | | | | X | | | X | | | | | | | | | X | | | | X | | | | | | | X | | | | | | | | | | | | |
| WPBA | | X | X | | | | | | | | | | | X | X | | | | | X | | | | | X | | | | | | | | | | | | | | |
| **Integra Premium** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| H_SF | | | | X | X | X | X | X | X | X | | X | X | X | X | X | | | | | | | | | X | X | | | | | | | | | | | | | |
| H_SCF | | | | X | X | X | X | X | X | X | | X | X | X | X | X | | | | | | | | | X | X | | | | | X | | | | | | | | |
| H_HFNL | | | | X | X | X | X | X | X | X | X | | | X | X | X | | | | | | | | | X | | | | X | | | | | | | | | |
| H_HCFNL | | | | X | X | X | X | X | X | X | X | | | X | X | X | | | | | | | | | X | | | | X | X | | | | | | | | |
| H_HF-6P | | | | X | X | X | X | X | X | X | X | X | X | X | X | X | | | | | | | | | X | | X | | | | | | | | | | | | |
| H_HCF-6P | | | | X | X | X | X | X | X | X | X | X | X | X | X | X | | | | | | | | | X | | X | | | | X | | | | | | | | |
| **Integra Impact** | | | | X | X | X | X | X | X | X | | X | X | X | X | X | | | | | | | | | X | | | | X | X | | | | | | | | |

# Enclosures Overview

## Who is Hubbell-Wiegmann?

Hubbell Incorporated has been in business since the late 1800s. Like his contemporaries, Edison, Ford, and Westinghouse, Harvey Hubbell II contributed to both spheres of progress: new design and manufacturing innovation. Wiegmann has been building high quality industrial enclosures for over 75 years. In 1994, Hubbell Incorporated purchased the company from the Wiegmann family. The Wiegmann brand is now part of the Hubbell Commercial Construction division. With the resources and backing of Hubbell, millions of dollars have been injected into the Wiegmann manufacturing facility. Foamed-in-place gaskets, powder coating, and smooth plasma corner welding are only a few of their product innovations. The enclosures are made in Freeburg, Illinois by skilled craftsmen with the aid of sophisticated Computer Numerical Controlled machinery. Wiegmann supplies enclosures for the OEM, commercial construction, and MRO markets.

Wiegmann continues to modernize and automate their enclosure manufacturing facility. Wiegmann is one of the largest enclosure manufacturers in North America. Their enclosure line includes a wide variety of carbon steel, galvanized steel, stainless steel, aluminum, and fiberglass enclosures, including enclosures for disconnects, pushbuttons, and operator consoles.

## Shipping Notes

Wiegmann part numbers in the specification tables on the following pages are color-coded as shown below to indicate their shipping schedule.

| Enclosure Shipping Schedule | | | |
|---|---|---|---|
| Same day | 1 - 7 days | 1 -10 days | 15 days |
| Color indicates shipping lead time in business days. | | | |

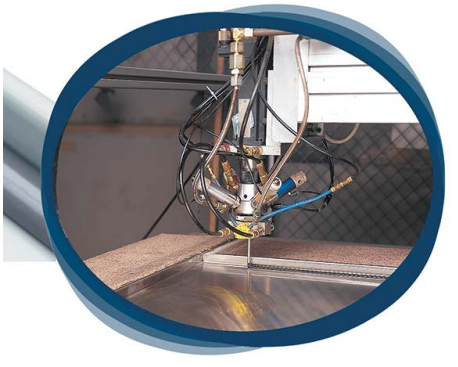
# It's not just a steel box!

## Quality manufacturing processes

At a casual glance, many enclosures look pretty much alike – big gray metal boxes. However, all enclosures are not created equal. A quality enclosure not only maintains a better appearance over time in an industrial environment, it also does a better job of protecting the components within it. The reliability of a control system depends on a quality enclosure properly protecting its electronic control components no matter what the external environment. Following the legacy of Harvey Hubbell II, Wiegmann is constantly modernizing their manufacturing facility in Freeburg, IL to produce enclosures of consistently high quality. CNC metal cutting, robotic plasma welding, and powder coating are just a few of the innovative steps the Wiegmann facility has taken in producing their enclosures. In addition, these processes also lower the cost for you, the user. Add our highly efficient operation, and you can enjoy "OEM-like" prices on single-unit purchases. Just look at a few of the features provided by the modernized manufacturing processes.

## Robotically foamed-in-place door gaskets

Robotic placement of liquid gasket material, cured with UV light and heat, bonds the door gasket to the polyester powder coating for a permanent bond. Have you ever opened an enclosure, only to have the gasket strip fall away from the door or stick to the enclosure? Foamed-in-place [FIP] gaskets will not peel away from the powder coating. Unlike conventional strip gasket material, FIP gaskets resist memory effect. Open and close your enclosure thousands of times and maintain a perfect seal.



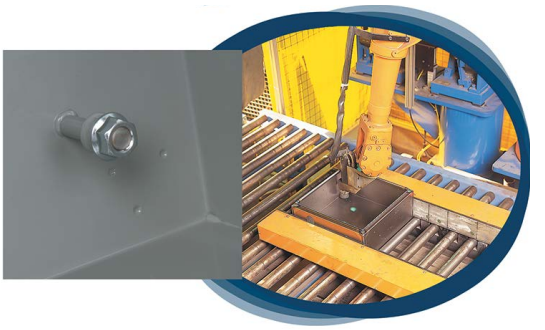
# Enclosures Overview

## Polyester powder coating

Carbon steel enclosures are phosphate treated prior to powder coating. This super clean surface is then sprayed with an electrostatically charged polyester powder before being cured in an oven. This finish is less likely to scratch than conventional liquid paints. Powder coating is also more UV resistent. This is a great benefit for your outdoor installations. Have you noticed the chalky appearance of outdoor enclosures? This is caused by UV light exposure. Wiegmann enclosures stay attractive longer in outdoor applications.

## Precision welded collared studs

Collared studs are precisely placed and welded on the inside of the enclosure. This allows fast, trouble-free mounting of the subpanel. Remember having to "adjust" the studs with a hammer when mounting sub-panels? Wiegmann subpanels slide right onto the studs.



## Stainless steel hinge pins

Many competitive enclosures use carbon steel hinge pins. These are prone to rust over time, making the door difficult and noisy to open. Wiegmann enclosures use stainless steel hinge pins on continuous hinge enclosure models for years of trouble-free operation.

## Plasma welded corners

Plasma welding robots join the seams at the enclosure corners for a rigid, void-free corner with a smooth appearance.

# Integra Polycarbonate Enclosures

Integra Enclosures manufactures engineered thermoplastic enclosures for use in applications requiring enclosures that are non-corrosive, non-conductive, easy to install and modify, and competitively priced.

Integra's superior design and polycarbonate construction provide an enclosure that is durable, seals tight, supports easy component installation, and looks great.

## Polycarbonate Applications

Polycarbonate enclosures are a superior choice for a wide range of outdoor applications and environments:

- Remote Monitoring - For remote placement of monitoring or networking devices/components.
- Alternative Energy - From solar to wind, keep systems safe from the environment.
- Water Treatment - Water/wastewater treatment and sprinkler systems are well protected in polycarbonate.
- Utility and Electrical - Utility applications that are housed outdoors are ideally enclosed in polycarbonate.
- Marine and Marina - Whether on ship or at the dock, guard against corrosive salt water and sun.

## Advantages of Polycarbonate

### Lighter Weight Than Other Enclosure Materials

The lighter weight makes polycarbonate enclosures easier to carry and install. The lighter weight may also save money on shipping costs.

### Eco-friendly

Polycarbonate enclosures at the end of their service life can be recycled, as can all scrap polycarbonate generated during the manufacturing process.

### Impact Resistance

Integra enclosures have been tested to UL-746 falling ball impact tests at 73°F. With their high impact resistance, Integra enclosures are rarely damaged from shipping and handling.

### UV Light Resistance

Polycarbonate is a strong, durable material with an integral UV inhibitor that withstands the harsh conditions of the outdoors. Polycarbonate enclosures will maintain their shape, color and strength even when exposed to UV light.

### Easily Modified

Polycarbonate enclosures are easy to modify because they cut easily and do not create hazardous dust, cause less wear on cutting tools, and leave a clean, attractive surface with no sharp edges.

### Wateright and Marine Friendly

All Integra polycarbonate enclosures are NEMA 4X rated, which means that these enclosures are watertight and can withstand direct water spray. Many models are also NEMA 6P rated, which means that they can withstand prolonged submersion at shallow depths. Polycarbonate enclosures are salt water resistant, which means they are marine friendly.

### Wide Operating Temperature Range

Polycarbonate is stable and holds its tensile strength over a temperature range from -40°F to 265°F.