# Flexible and Safe Housing Combinations for Electrical Explosion Protection

**To meet individual requirements for process automation, customers often combine multiple housings to create a complete solution. Combining flameproof Ex d enclosures with those of the "increased safety" Ex e type has proven especially effective. Known as Ex de solutions, they allow the safe use of non-hazardous components in the Ex d enclosure, while the Ex e enclosure provides the connection area for cabling and control components. This separation offers many advantages - from simplified installation to more convenient maintenance during ongoing operation.**

**Optimized Solutions with Ex de Enclosure Solutions**  
Strict requirements from IEC 60079-14 must be followed when connecting a flameproof system to the plant and during maintenance work. The combination of Ex d and Ex e significantly reduces the effort required. Pepperl+Fuchs offers customized Ex de solutions that combine Ex d and Ex e enclosures. There are no restrictions regarding the arrangement. The enclosures are securely connected by specially designed wire bushings, while a flange ensures degree of protection (IP) by preventing dirt and moisture from entering.  
  
   
The Ex e connection and control stations are based on rugged housings that are manufactured in-house. A wide selection of operating elements allows easy adaptation to customer-specific requirements. The combination enables simple expansion and modification of the control elements in the Ex e enclosure, while the industrial control components remain optimally protected in the sealed and certified Ex d enclosure. The result is quick commissioning with minimum downtime and reduced maintenance costs throughout the lifetime of the system.

**Additional Flexible Flange Solutions for Maximum Adaptability**  
It's not only Ex de combinations that offer decisive advantages—connecting Ex e enclosures to each other also creates flexible solutions for complex applications. Often, an application requires more space than a single enclosure provides. By flanging multiple Ex e enclosures together, larger controls and separations between different functional areas can be implemented. Pepperl+Fuchs offers both plastic and stainless steel enclosures that offer modular expansion using flexible flange solutions. This modular design ensures maximum flexibility in plant design and allows customization for different industrial requirements.   
  
With the innovative enclosure combinations from Pepperl+Fuchs, users benefit from an optimal combination of safety, ease of maintenance, and adaptability—a future-oriented solution for the challenges of modern process automation.

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| **Caption** | An Ex de DC power distributor mounted on a specially made frame. This solution was used on an offshore platform |
| **Download URL**  <https://myconvento.com/public/get_file.php?id=enc2_WjFsb2EyVkdWVEJVZDBGWk0xQnlORWhEUW1sSWR6MDk&download=1> | |

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| **Caption** | Combination of an Ex d GUB enclosure with a viewing panel and an Ex e plastic enclosure from the GR series as a controller. |
| **Download URL**  <https://myconvento.com/public/get_file.php?id=enc2_Y2xCdE5rWkRaRGc1UWlzMk5IYzRlakpVVVd4dFVUMDk&download=1> | |

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