

## INGRESS PROTECTION CONNECTION SYSTEMS

Electronic equipment is frequently used for outdoor or other applications requiring environmental protection. To answer industry's demand for affordable connection systems compatible with environmental protection to IEC 60529 and NEMA 250-1991 performance requirements for electrical enclosures, Positronic Industries has introduced three dust and water ingress protection connection systems.

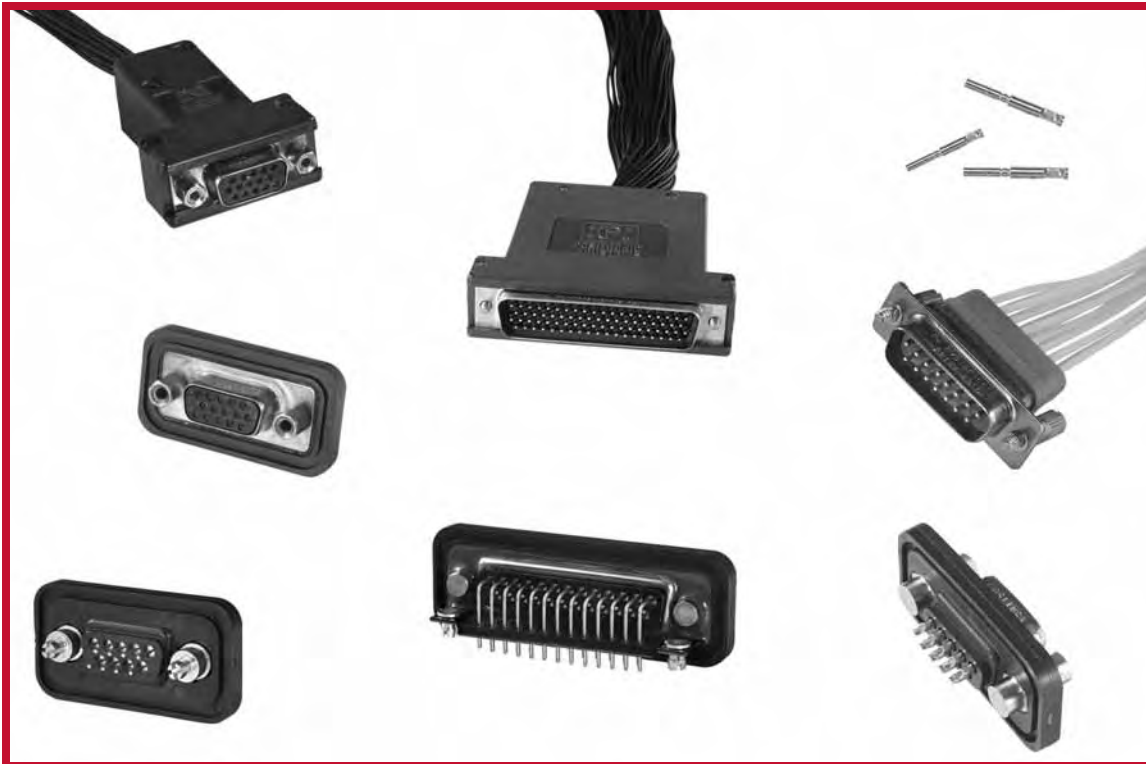
**SYSTEM 1** is an enclosure mounted connector assembly. The connection system is designed for periodic electrical operation after being exposed to a variety of environmental conditions.

**SYSTEM 2** is an enclosure mounted connector assembly, which is coupled to a compatible free cable connector. The connection system is designed for continuous electrical operation while being subjected to varying environmental conditions.

**SYSTEM 3** is a cable to cable connection system designed for continuous electrical operation while subjected to varying environmental conditions.

An explanation of the dust and water ingress protection requirements as defined by IEC 60529 Degrees of Protection Provided by Enclosures, and NEMA 250-1991 Enclosures for Electrical Equipment, may be found in the Appendix section of this catalog. (See section beginning on page 49)

It is recommended that readers familiarize themselves with the technical information and ingress protection rating systems contained in the Appendix so that a better understanding of dust and water ingress protection connection systems can be achieved.





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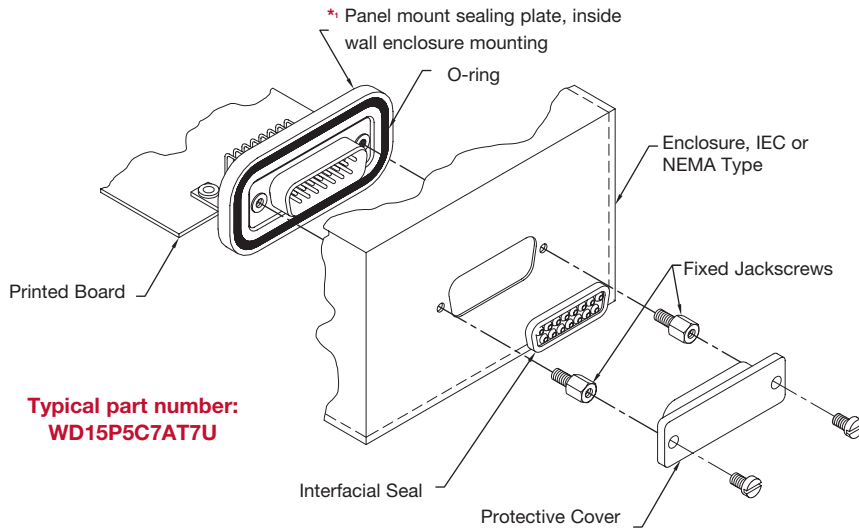
## GENERAL INFORMATION

Environmental  
D-Sub

### CONNECTION SYSTEM 1

#### FIXED ENCLOSURE MOUNTED CONNECTOR

*Provides ingress protection in an unmated condition.*



Typical part number:  
**WD15P5C7AT7U**

**This type of ingress protection can be achieved by selecting:**

WD Series (page 13)

**OR**

WDD Series (page 18)

**Note:**

\* Outside enclosure wall panel mount sealing plate also available. See Unique Features section, page 46.

### SYSTEM 1

System 1 consists of an input/output connector mechanically mounted and sealed to an enclosure. The connector and enclosure together provide a degree of protection from dust and moisture in accordance with IEC or NEMA ingress protection requirements. The enclosure and connector may be exposed to dust, splashing water, rain, or limited water immersion during its use.

“Corrosion Protection” option is standard. When “Corrosion Resistance” is a requirement, the connector is equipped with stainless steel shells and jackscrews, and contacts plated 0.000030 inch [0.76 μ] gold over nickel.

## CONNECTOR/ENCLOSURE ENVIRONMENTAL RATINGS

**IEC 60529 Classification**  
**Designations Rated to**  
**IP67 Degree of Protection**  
*(See Appendix for detail)*

**IP67, “Corrosion Protected”**

Dust tight and limited effects of water immersion, 0.5 meters for 30 minutes. Corrosion protected with zinc plated chromate sealed shells and jackscrews. Contacts plated gold flash over nickel.

**IP67, “Corrosion Resistance”**

Dust tight and limited effects of water immersion 0.5 meters for 30 minutes. Corrosion resistant with stainless steel shells and jackscrews. Contacts plated 0.000030 inch [0.76 μ] gold over nickel.

**NEMA Enclosure Types**  
**Approximate Equivalents of**  
**IP67 Degree of Protection**  
*(See Appendix page 49 for details)*

**NEMA Types 3, 3R, 4 and 6**

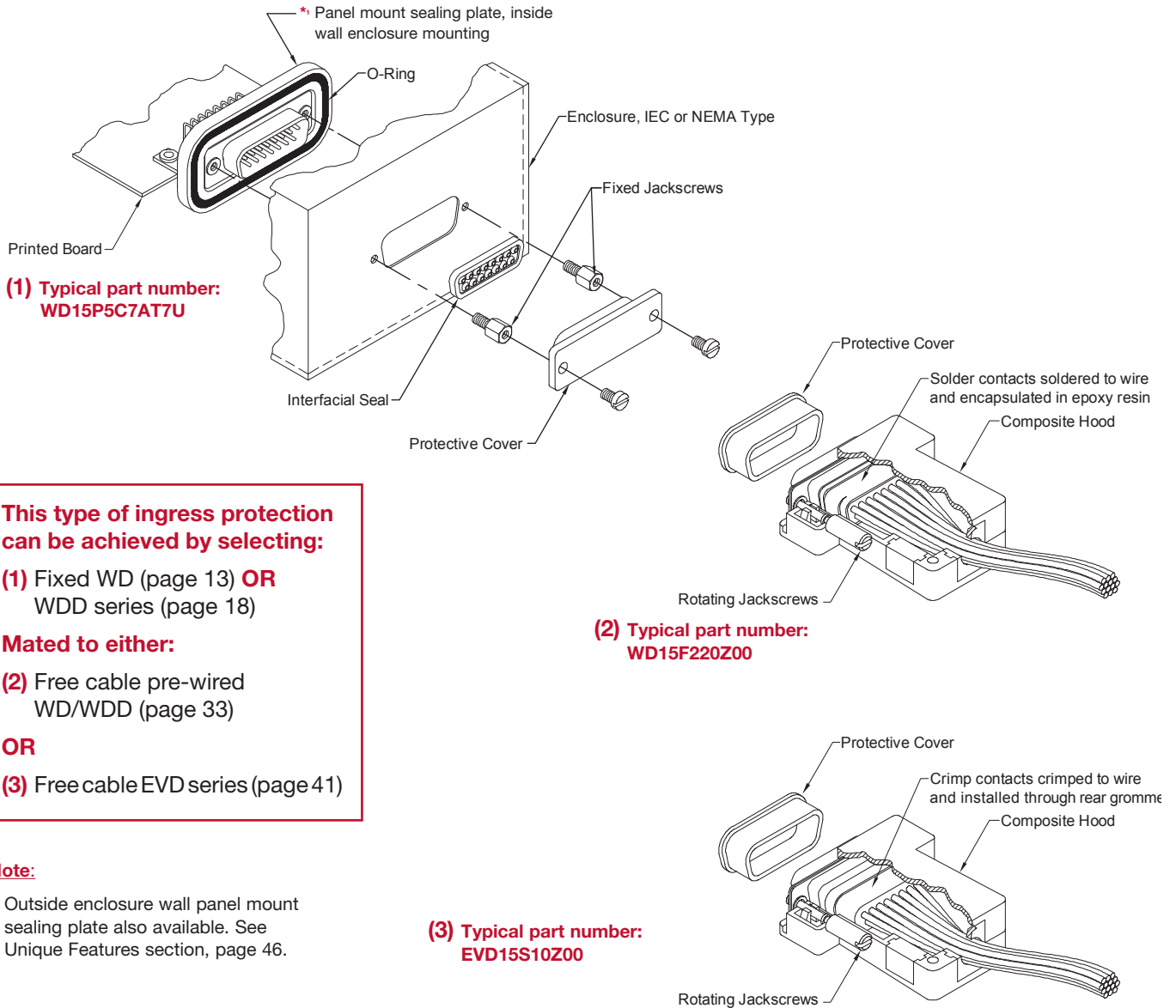
**NEMA Type 4X**

*For information regarding IEC 60529 and NEMA 250-1991, see Appendix, page 49.*

CONNECTION SYSTEM 2

**FIXED ENCLOSURE MOUNTED CONNECTOR MATED TO FREE CABLE CONNECTOR**

*Provides ingress protection of connector system for continuous electrical operation.*



**(1) Typical part number:  
WD15P5C7AT7U**

**This type of ingress protection can be achieved by selecting:**

**(1) Fixed WD (page 13) OR  
WDD series (page 18)**

**Mated to either:**

**(2) Free cable pre-wired  
WD/WDD (page 33)**

**OR**

**(3) Free cable EVD series (page 41)**

**Note:**

\* Outside enclosure wall panel mount sealing plate also available. See Unique Features section, page 46.

**(2) Typical part number:  
WD15F220Z00**

**(3) Typical part number:  
EVD15S10Z00**

**SYSTEM 2**

System 2 consists of a fixed input/output connector and a compatible free cable connector. The system is normally in operation and may be exposed to dust, splashing water, rain, limited water immersion or hose directed water.

The fixed connector is selected from the connectors offered in System 1. The mating (free or cable) connector must be electrically, mechanically, and chemically compatible with

the fixed connector. This requirement enables System 2 to provide the desired **“Corrosion Resistance”** or **“Corrosion Protection”** and maintain the degree of ingress protection IP67 as specified in IEC 60529.

The male connector of System 2 is always equipped with an interfacial seal.



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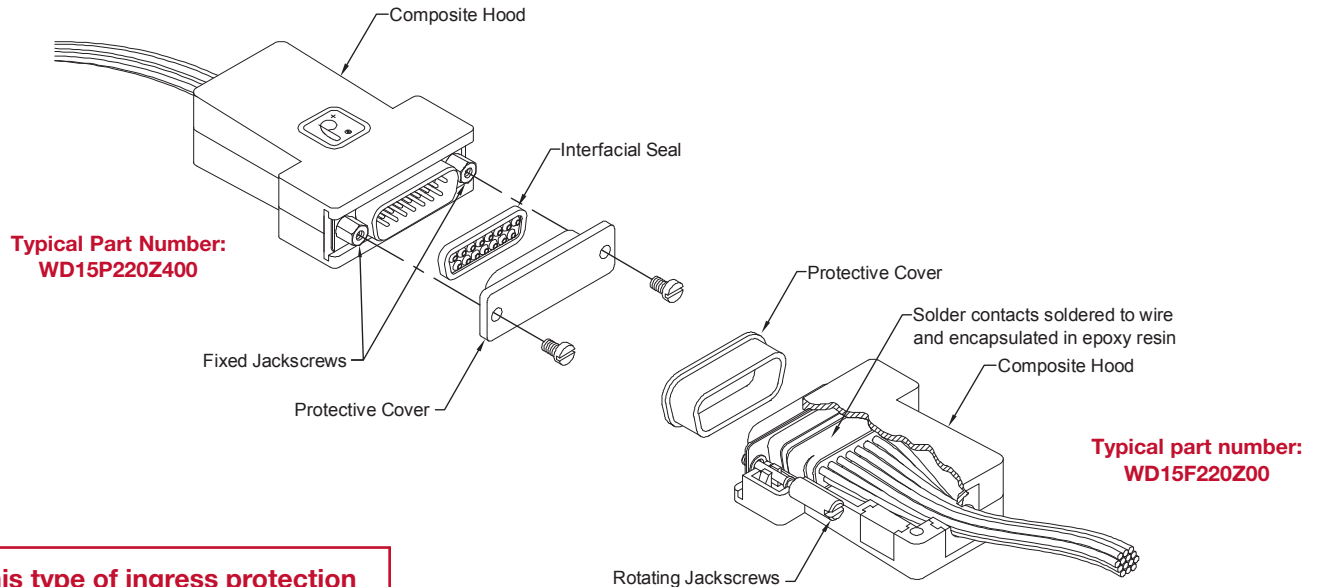
## GENERAL INFORMATION

Environmental  
D-Sub

### CONNECTION SYSTEM 3

#### FREE CABLE-TO-CABLE PRE-WIRED CONNECTORS

*Provides ingress protection of connector system for continuous electrical operation.*



**This type of ingress protection can be achieved by selecting:**

Free cable pre-wired  
WD/WDD (page 33)

**Note:**

Shell sizes 3, 4 & 5 only: heat shrink is provided in cable clamp area over wiring bundle.

### SYSTEM 3

System 3 is a cable-to-cable interconnection system consisting of two free cable connectors. The system is normally in operation and may be exposed to dust, splashing water, rain, limited water immersion or hose directed water.

The connectors must be electrically, mechanically, and chemically compatible with each other. This requirement

enables System 3 to provide the desired level of **“Corrosion Resistance”** or **“Corrosion Protection”** and maintain the degree of ingress protection IP67 as specified in IEC 60529.

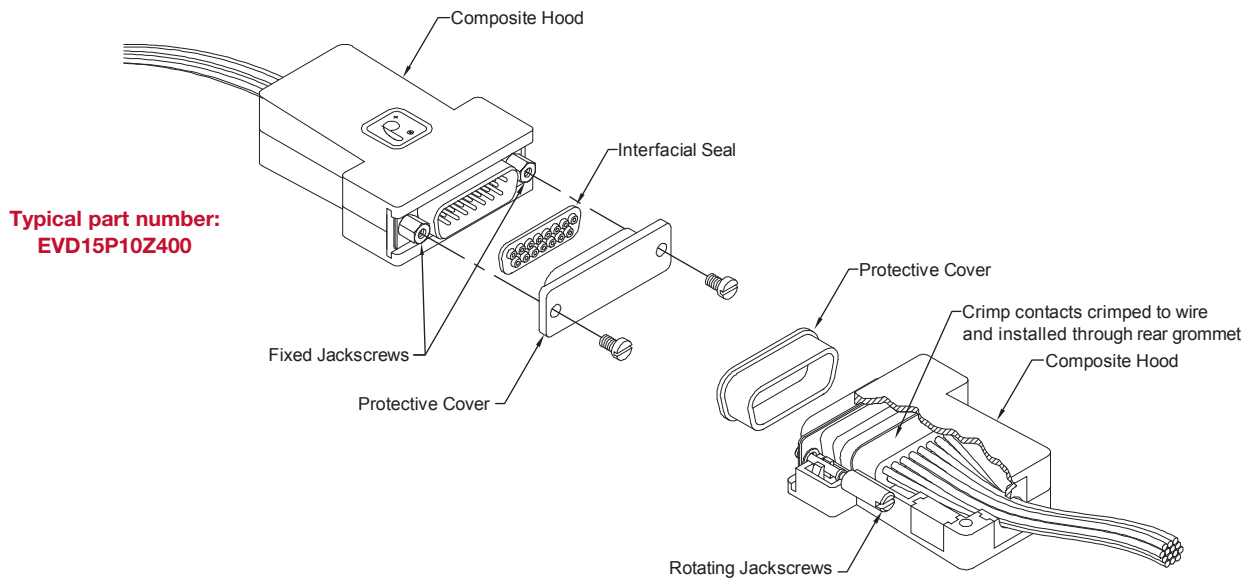
The male connector of System 3 is always equipped with an interfacial seal.

*For information regarding IEC 60529 and NEMA 250-1991, see Appendix, page 49.*

## CONNECTION SYSTEM 3

### FREE CABLE-TO-CABLE CONNECTORS WITH CRIMP REMOVABLE CONTACTS

*Provides ingress protection of connector system for continuous electrical operation.*



Typical part number:  
EVD15P10Z400

Typical part number:  
EVD15S10Z00

**This type of ingress protection can be achieved by selecting:**  
Free cable EVD series (page 41)

## SYSTEM 3

System 3 is a cable-to-cable interconnection system consisting of two free cable connectors. The system is normally in operation and may be exposed to dust, splashing water, rain, limited water immersion or hose directed water.

The connectors must be electrically, mechanically, and chemically compatible with each other. This requirement

enables System 3 to provide the desired level of **“Corrosion Resistance”** or **“Corrosion Protection”** and maintain the degree of ingress protection IP67 as specified in IEC 60529.

The male connector of System 3 is always equipped with an interfacial seal.

*For information regarding IEC 60529 and NEMA 250-1991, see Appendix, page 49.*