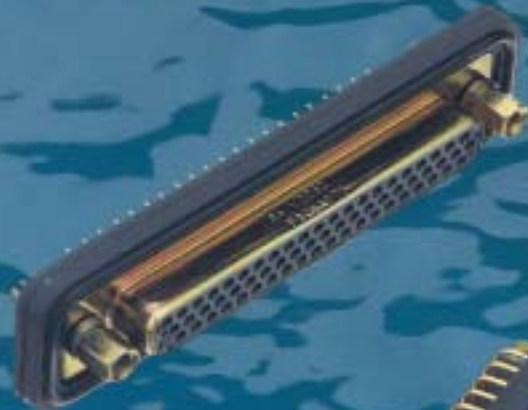


**CATALOG OF
WATER & DUST INGRESS PROTECTION
SUBMINIATURE-D
CONNECTION SYSTEMS**

NEMA 250-1991
MIL-STD-1344
IEC 529



POSITRONIC INDUSTRIES, INC.

Maximum Torque Values for 4-40 UNC Threads

MATERIAL	TORQUE		
	Nm	in-lb	in-oz
Phos. Bronze	0.90	8.0	128
Brass	0.68	6.0	96
Aluminum	0.45	4.0	64
Nylon	0.11	1.0	16

These torque values are applicable for threads only and do not apply to hardware assemblies. These torque values are approximate and should not be accepted as accurate limits. Indeterminant factors in specific applications preclude the publication of accurate torque values for universal use.

Unless otherwise specified, dimensional tolerances are:

- 1) ± 0.001 inches (0.03 mm) for male contact mating diameters.
- 2) ± 0.003 inches (0.08 mm) for contact termination diameters.
- 3) ± 0.005 inches (0.13 mm) for all other diameters.
- 4) ± 0.015 inches (0.38 mm) for all other dimensions.

CATALOG NUMBER:
C-006 REV. NC

PUBLISHED IN THE UNITED STATES OF AMERICA

Positronic Industries, Inc. believes the data contained herein to be reliable. Since the technical information is given free of charge, the User employs such information at his own discretion and risk. Positronic Industries, Inc. assumes no responsibility for results obtained or damages incurred from use of such information in whole or in part.

Positronic Industries' FEDERAL SUPPLY CODE FOR MANUFACTURERS is Number 28198.

INGRESS PROTECTION CONNECTION SYSTEMS

Electronic equipment is more frequently being used for outdoor environmental applications such as portable computers, fixed location instruments and control systems. To answer industry's demand for affordable connection systems compatible with IEC 529 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 for use on portable equipment. The connection system is designed for periodic operation after being exposed to a variety of environmental conditions.

SYSTEM 2 is an enclosure mounted connector assembly for use on fixed location equipment, which is coupled to a compatible cable connector. The connection system is designed for continuous operation while

being subjected to varying environmental conditions.

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

More detail as well as an explanation of the dust and water ingress protection requirements as defined by IEC 529 Degrees of Protection Provided by Enclosures, and NEMA 250-1991 Enclosures for Electrical Equipment, may be found in the Appendix section of this catalog.

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.

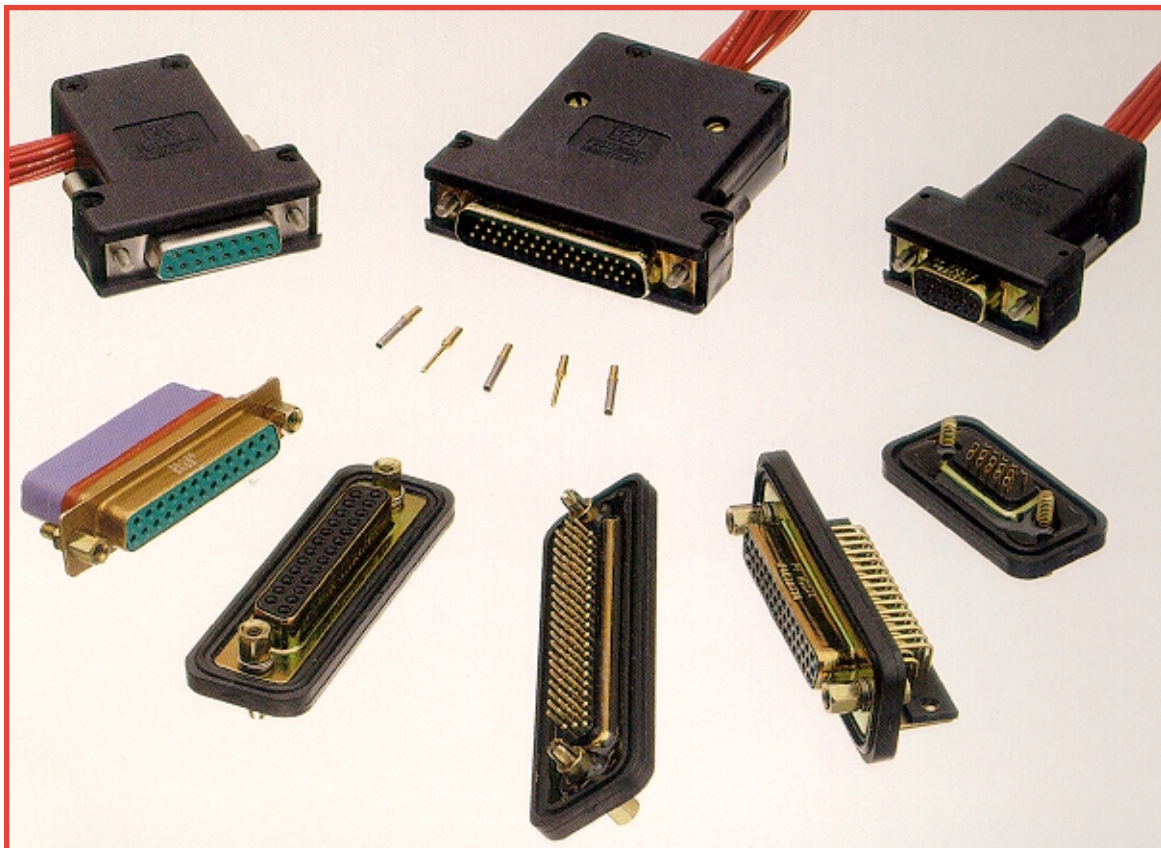
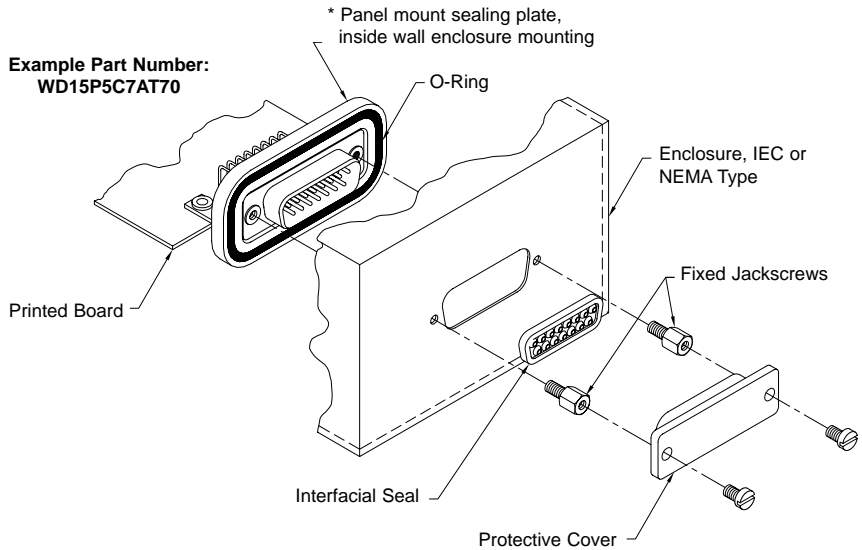


TABLE OF CONTENTS

Description of Ingress Protection Connection Systems 1, 2 and 3	1 - 3
WIN-D Series, Normal Density, Fixed Contact, Subminiature-D Ingress Protected Connectors	4 - 9
WIN-DD Series, High Density, Fixed Contact, Subminiature-D Ingress Protected Connectors	10 - 16
WIN-D and WIN-DD Series Common Components and Panel Cut-Out Technical Information	17 - 18
WIN-D and WIN-DD and Environmental D-Series Connectors Coupling Information	19
Ordering Information WIN-D and WIN-DD Connection Systems 1, 2 and 3	20 - 22
Environmental-D Series, Normal Density, Removable Contact, Subminiature-D Connectors for Military and Severe Industrial Environmental Applications	23 - 28
Environmental-D Series Ordering Information	29
Environmental-D Series Contact Ordering Information.	30
Environmental-D Series Crimping Information and Crimp Tools	31 - 33
Appendix A - Description of IEC 529 and NEMA 250-1991, Enclosures and Environmental Classifications	34 - 37

**SYSTEM 1
FIXED ENCLOSURE
MOUNTED CONNECTOR**

The connector is mounted on the portable enclosure. Interfacial seal supplied if a male connector. The mating connector is in a remote location and is non-environmental.



SYSTEM 1

System 1 consists of an input/output connector mechanically mounted and sealed to a portable enclosure containing electrical equipment. 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, intermittent rain, or limited water immersion dur-

ing its outdoor use. When “**Corrosion Resistance**” is a requirement, the connector should be equipped with stainless steel shells and jackscrews, and contacts plated 0.000030 inch (0.8 microns) gold over nickel.

The portable enclosure will be connected (down loaded) periodically to a non-environmental performance connector positioned in a dry and controlled atmosphere environment.

CONNECTOR-ENCLOSURE UNIT ENVIRONMENTAL RATINGS

**IEC 529 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 dichromate 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 (0.8 microns) gold over nickel.

**NEMA Enclosure Types
Approximate Equivalents of
IP67 Degree of Protection**
(See Appendix for detail)

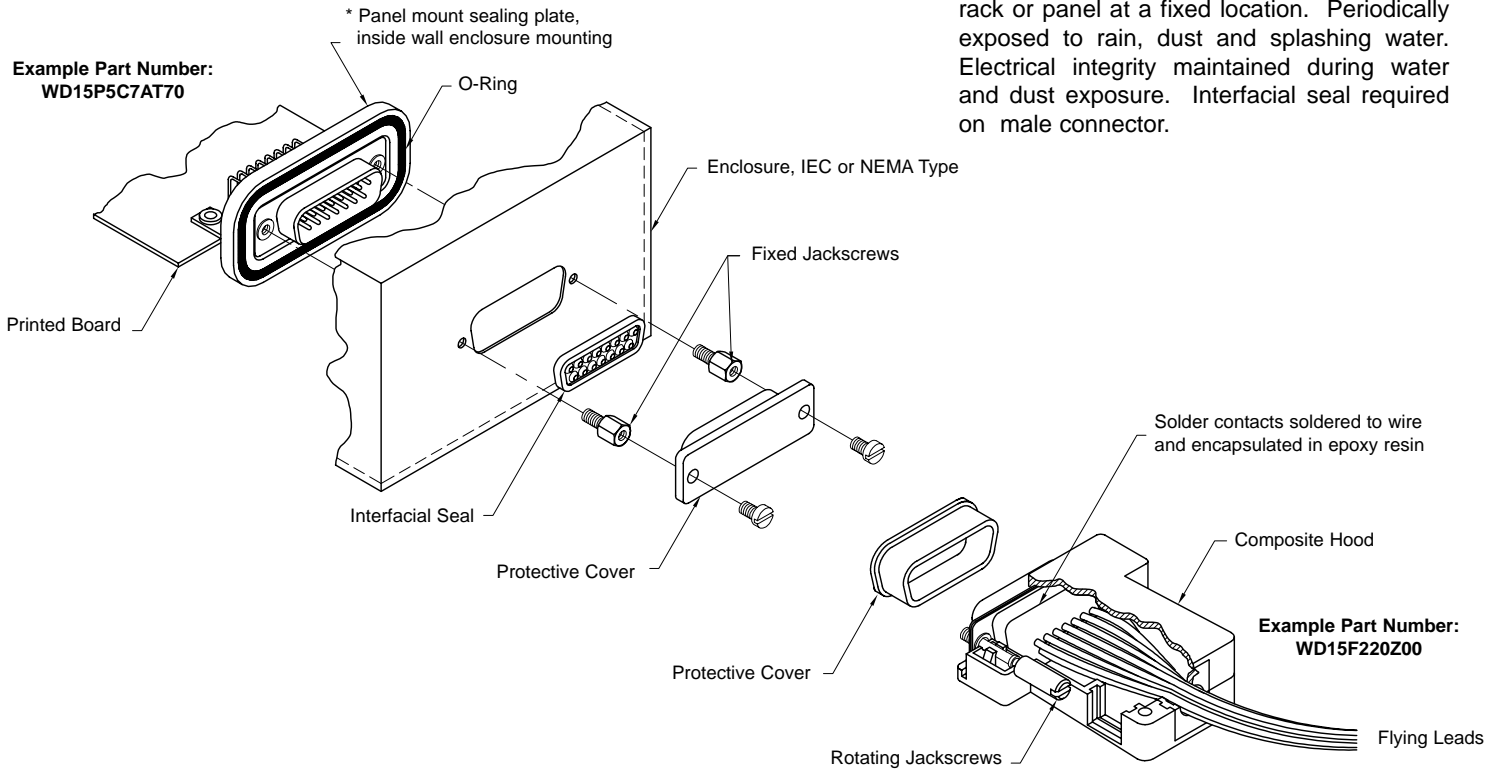
NEMA Types 3, 3R, 4 and 6

NEMA Type 4X

*Outside enclosure wall panel mount sealing plate also available

SYSTEM 2
FIXED ENCLOSURE
MOUNTED CONNECTOR
TO FREE CABLE
CONNECTOR

Consists of an enclosure or instrumentation rack or panel at a fixed location. Periodically exposed to rain, dust and splashing water. Electrical integrity maintained during water and dust exposure. Interfacial seal required on male connector.



SYSTEM 2

System 2 consists of a fixed (mechanically mounted and sealed) input/output connector and a compatible free or cable connector. This system is normally used with fixed enclosures, instrumentation racks, or panels which are periodically exposed to rain, dust, icing, or hose directed water.

The fixed connector must be selected from the connectors offered in System 1. The selected mating (free

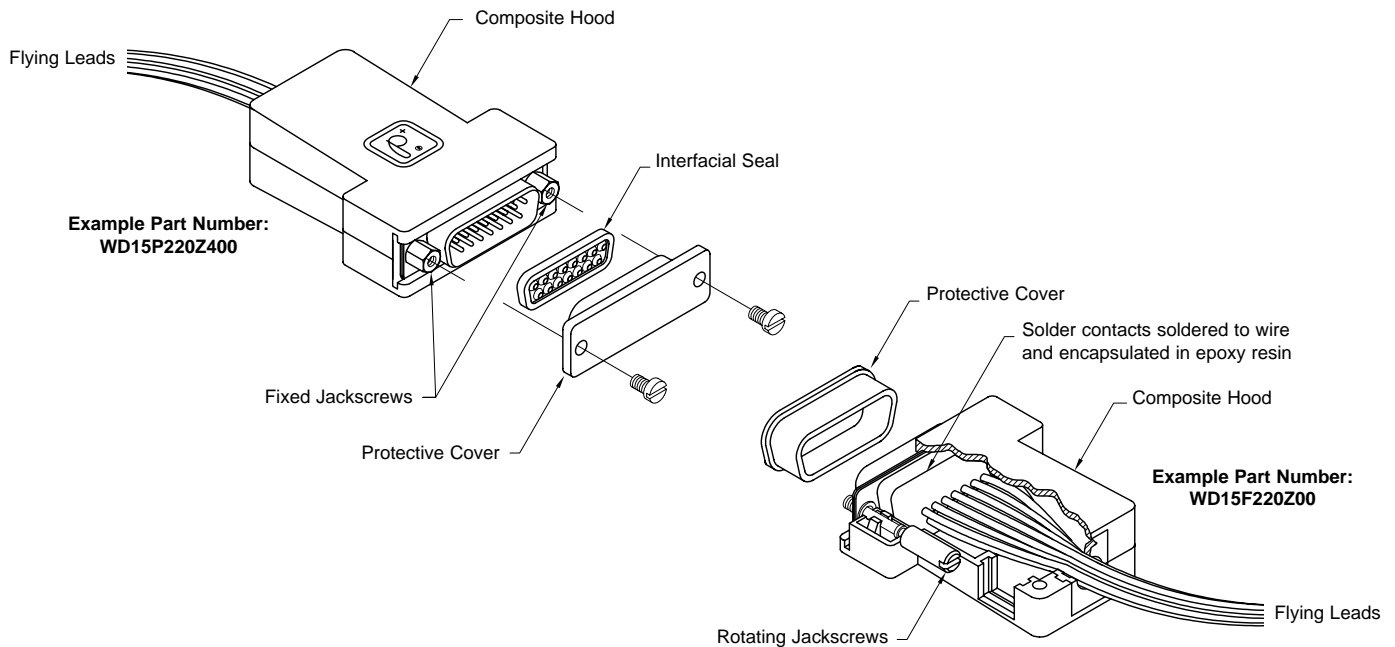
or cable) connector must be electrically, mechanically, and chemically compatible with the fixed connector. This requirement enables System 2 to provide the desired **“Corrosion Resistance”** or **“Corrosion Protection”** and maintain the degree of ingress protection IP67 as specified in IEC 529.

The male connector is always equipped with an interfacial seal.

*Outside enclosure wall panel mount sealing plate also available

SYSTEM 3
CABLE-TO-CABLE
FREE CONNECTORS

Connectors periodically exposed to rain, dust and splashing water. Electrical integrity maintained during water and dust exposure. Interfacial seal required on male connector.



SYSTEM 3

System 3 is a cable-to-cable interconnection system consisting of two free cable connectors. This system is used for applications requiring protection from periodic exposure to rain, dust, icing, or hose directed water.

The selected 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 529.

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

WIN-D Series

PROFESSIONAL QUALITY, SUBMINIATURE-D CONNECTORS

FOR INDOOR/OUTDOOR NONHAZARDOUS ENVIRONMENTAL APPLICATIONS WHERE PROTECTION FROM DUST, RAIN, HOSE DIRECTED WATER AND LIMITED WATER IMMERSION IS REQUIRED

Size 20 Contacts, Fixed
Normal Density Connector
Solder Cup and
Solder Printed Board Mount

Professional Quality Connectors
IEC Publication 807-2
Performance Level 2

U.L. Recognized CSA Recognized
File #E49351 File #LR54219
Telecommunication
U.L. File #E140980



The WIN-D series environmental connector systems achieve water and dust ingress protection capabilities to IP67 by incorporating the following characteristics into the connector designs and production processes: 1) solid metal precision machined contacts which are sealed into the connector body retention systems. 2) silicon sealing between connector body and trapezoidal shells. 3) special "cul-de-sac" style splash and rain proof connector mounting and coupling hardware. 4) and a special wall panel mount plate with O-ring seal. Interfacial seals are supplied with male connectors.

For extremely harsh environments, or where "Corrosion Resistance" is required, the contacts are supplied with extra gold plating thickness and the connector shells and jackscrews are supplied in stainless

steel. For applications where "Corrosion Protection" is adequate, contact surfaces are gold flashed with shells and accessories being zinc plated with dichromate seal.

Cable support for free cable connectors is provided by use of a robust hood of composite material or an ingress protected molded cable assembly may be specified.

Five normal density contact connector variants are offered in arrangements of 9, 15, 25, 37, and 50 contacts. A variety of solder terminated contacts and "cul-de-sac" accessories are available to meet specific application requirements. WIN-D Series connectors meet IEC 807-2 Performance Level 2 mechanical and dimensional requirements and conform to EIA RS232 and RS449 and CCITT X.24 interface standards.

WIN-D SERIES TECHNICAL CHARACTERISTICS

ENVIRONMENTAL CHARACTERISTICS:

WIN-D series connectors mounted on IEC 529 or NEMA 250-1991 enclosures for electrical equipment.

WIN-D Connector Panel mount sealing plates, when mounted on the walls of enclosures, maintain the dust and water ingress protection rating of IEC 529 or NEMA 250 enclosure on which they are mounted.

WIN-D connector enclosure assemblies provide dust and water ingress protection to IP67 which allows temporary immersion in water to a depth of 0.5 meters for

30 minutes without ingress of water or dust to the enclosure.

Refer to Appendix A for details of IP67 ratings and NEMA enclosure types 6 and 4X, as well as other IEC and NEMA enclosures having less stringent environmental requirements.

WIN-D Series Cable Connectors with Cable Support

WIN-D cable connectors meet all the requirements of IEC 807-2 Performance Level 2, plus the ingress protection requirements of IP67 thereby maintaining the electrical integrity and the ingress protection level of the connection system.

WIN-D SERIES TECHNICAL CHARACTERISTICS

ENVIRONMENTAL TEST SPECIFICATIONS

Applicable IEC Moisture Tests

IP65 IEC 529 Test 14.2.5 – Spray nozzle 6.3 mm diameter, delivery rate 12.5 liters per minute, 1 minute duration of connector exposure to spray. When conducting this test on System 1 – Portable Enclosure Connectors, the protective cover must be securely fastened over the face of the connector.

IP67 IEC 529 Test 14.2.7 – Temporary immersion, 0.5 meters for 30 minutes.

Applicable IEC Connector Tests After Moisture Exposure Tests Have Been Performed

IEC 512-2, Test 3a – Insulation Resistance

IEC 512-2, Test 4a – Voltage proof

Limited water immersion testing was performed on virgin connectors before leaving our factory. We recommend that our environmental connectors be retested by our customers after a suitable period of time/temperature conditioning has taken place to determine the suitability of the connector for the application. We cannot predict service life of our connectors for all applications.

MATERIALS AND FINISHES:

Insulator:	Nylon resin, UL 94V-0 black color.
Contacts:	Male contacts – precision machined brass alloy or phosphor bronze. Female contacts – precision machined high tensile phosphor bronze.
Contact Plating:	“ Corrosion Protection ”: gold flash over nickel plate. “ Corrosion Resistant ”: gold plate 0.000030 inch (0.8 micron) over nickel plate. “ Corrosion Protected ”: steel, zinc plated with dichromate seal. “ Corrosion Resistant ”: stainless steel passivated.
Shells and Jackscrew Systems and Cul-de-Sac Mounting Accessories:	
Push-on Fasteners:	Phosphor bronze with tin plate.
Angle Brackets:	Brass, zinc plate with dichromate seal.
Hoods (Cable supports):	Composite.
Interfacial Seal:	Elastomer or TPE.
Panel Mount Sealing Plate Assembly:	Glass filled thermoplastic with elastomer O-ring.
Protective cover over connector shell:	Conductive polyethylene or conductive polyester.

ELECTRICAL CHARACTERISTICS:

Contact Current Rating:	7.5 amperes nominal.
Initial Contact Resistance:	0.008 ohms maximum.
Insulator Resistance:	5 G ohms.
Clearance and Creepage Distance Minimum:	0.039 inch (1mm).
Proof Voltage:	1000 V r.m.s.
Working Voltage:	300 V r.m.s.

REQUIREMENTS

No water to have penetrated enclosure through connector.

No water to have penetrated enclosure through connector.

REQUIREMENTS

System 1 – Portable enclosure. 1 G ohm minimum insulation resistance after connector face and contacts are dried. Voltage proof 1,000 V rms.

System 2 – Enclosure mounted connector to cable connector. 1 G ohm minimum insulation resistance. 1,000 V rms. Voltage proof.

System 3 – Cable to cable connection systems. 1 G ohm minimum insulation resistance. 1,000 V rms. Voltage proof.

MECHANICAL CHARACTERISTICS:

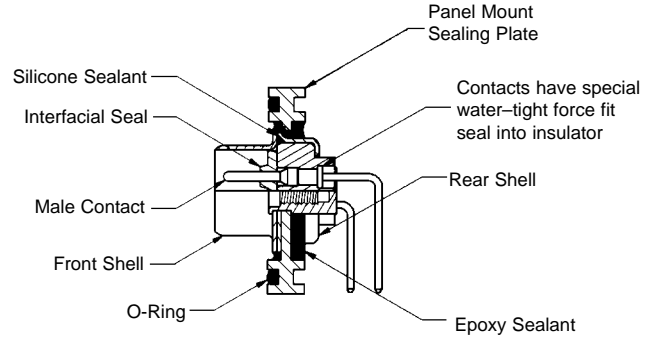
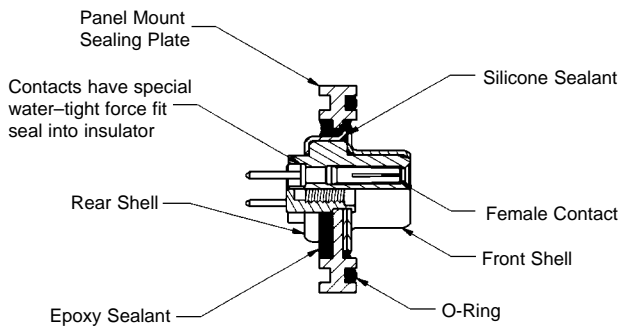
Fixed Contacts:	Size 20 contact, male contact – 0.040 inch (1.02 mm) diameter. Female contact – rugged open entry design.
Contact Retention in Insulator:	6 lbs. (27N)
Resistance to Solder Iron Heat:	500°F (260°C) for 10 seconds duration per IEC 512-6.
Contact Terminations:	Solder cup contacts – 0.042 inch (1.06 mm) minimum hole diameter for 20 AWG (0.5 mm ²) wire maximum. Straight printed board mount – 0.028 inch (0.71 mm) diameter. 90° printed board mount – 0.028 inch (0.71 mm) diameter for all printed board contact footprints.
Polarization:	Trapezoidally shaped shells.
Enclosure Mounting Accessories:	Cul-de-sac blind hole fasteners, angle brackets and push-on fasteners.
Inside Wall Enclosure Mount:	Minimum thickness 0.040 inch (1.0 mm). Maximum thickness 0.080 inch (2.0 mm).
Outside Wall Enclosure Mount:	Minimum thickness 0.040 inch (1.0 mm). Practical maximum limitation 0.200 inch (5.0 mm).
Locking Systems:	Jackscrews.
Mechanical Operations:	250 operations minimum per IEC 512-5 IP67 immersion rated. 500 operations minimum per IEC 512-5 IP65 spray nozzle rated.
Required Sealing Plate Mounting Torque:	1.75 in-lb. (0.20 Nm) minimum. 2.25 in-lb. (0.25 Nm) maximum.

CLIMATIC CHARACTERISTICS:

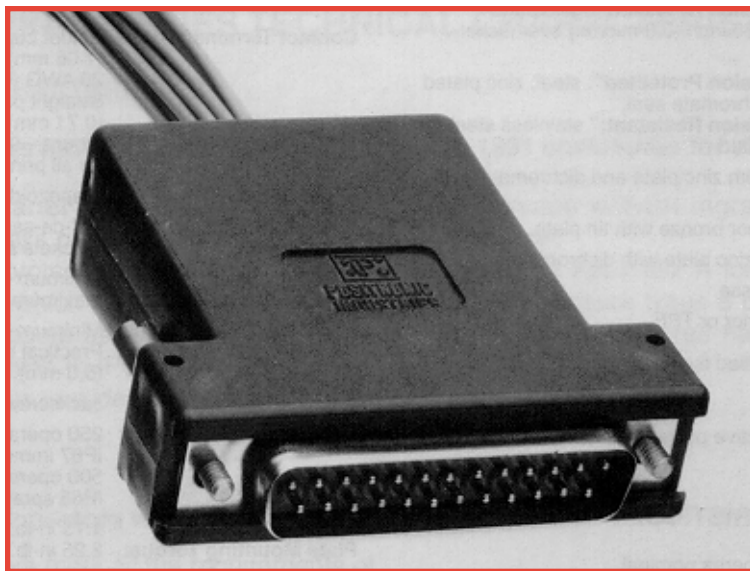
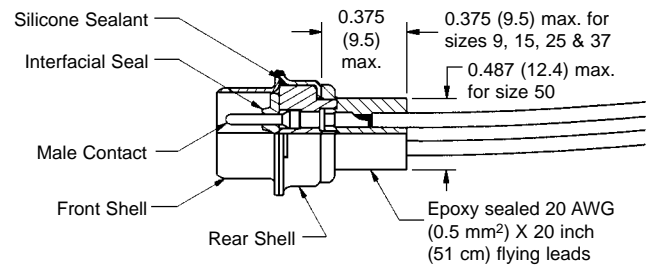
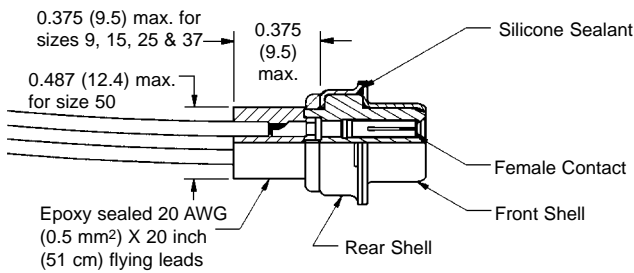
Temperature Range: -25°C to +85°C

WD SERIES ENVIRONMENTAL SEALING DESIGN FEATURES

**ENCLOSURE MOUNTED CONNECTORS
SYSTEMS 1 AND 2**



**CABLE CONNECTORS
SYSTEMS 2 AND 3**

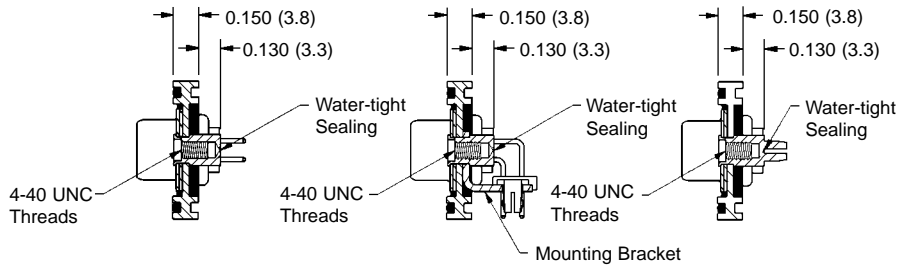


WD25P220Z00

**DIMENSIONS ARE IN INCHES (MILLIMETERS).
ALL DIMENSIONS ARE SUBJECT TO CHANGE.**

WD SERIES CUL-DE-SAC STYLE MOUNTING ACCESSORIES

INSIDE WALL ENCLOSURE MOUNT



C5

STEEL, ZINC PLATE
WITH DICHROMATE SEAL OR
STAINLESS STEEL, PASSIVATED

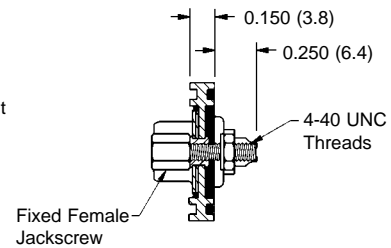
C7

STEEL, ZINC PLATE
WITH DICHROMATE SEAL,
OR STAINLESS STEEL,
PASSIVATED

C8

PHOSPHOR BRONZE,
TIN PLATE

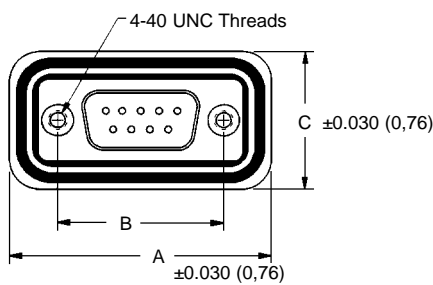
OUTSIDE WALL ENCLOSURE MOUNT



C9

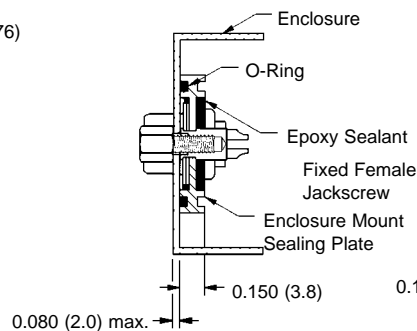
STEEL, ZINC PLATE WITH DICHROMATE SEAL,
OR STAINLESS STEEL, PASSIVATED

CONNECTOR TO ENCLOSURE WALL MOUNT SEALING PLATE

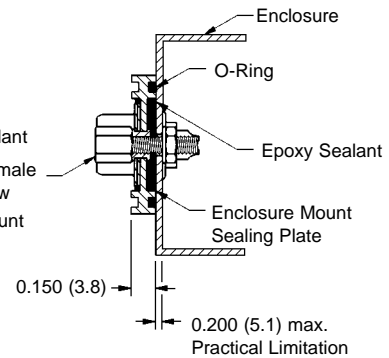


CONNECTOR VARIANT	A	B	C
9	1.550 (39.4)	0.984 (25.0)	0.830 (21.1)
15	1.878 (47.7)	1.312 (33.3)	0.830 (21.1)
25	2.418 (61.4)	1.852 (47.0)	0.830 (21.1)
37	3.066 (77.9)	2.500 (63.5)	0.830 (21.1)
50	2.972 (75.5)	2.406 (61.1)	0.941 (23.9)

INSIDE WALL ENCLOSURE MOUNT



OUTSIDE WALL ENCLOSURE MOUNT



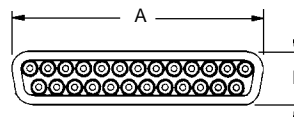
SEALING PLATE MATERIAL: GLASS FILLED THERMOPLASTIC

SEALING PLATE IS MOUNTED TO ENCLOSURE WALL WITH JACKSCREWS TORQUED TO A VALUE OF 1.75 in-lb (0.20 Nm) MINIMUM, 2.25 in-lb (0.25 Nm) MAXIMUM

INTERFACIAL SEAL FURNISHED ON ALL MALE CONNECTORS

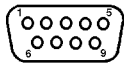
CONNECTOR VARIANT	A	B
9	0.67 (17.0)	0.34 (8.6)
15	1.00 (25.4)	0.34 (8.6)
25	1.53 (38.9)	0.34 (8.6)
37	2.18 (55.4)	0.34 (8.6)
50	2.08 (52.8)	0.45 (11.4)

MATERIAL: ELASTOMER OR TPE

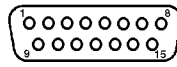


DIMENSIONS ARE IN INCHES (MILLIMETERS).
ALL DIMENSIONS ARE SUBJECT TO CHANGE.

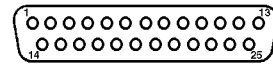
CONTACT VARIANTS FACE VIEW OF MALE CONNECTOR



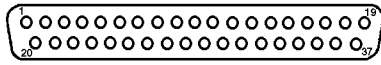
WD9



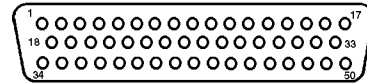
WD15



WD25

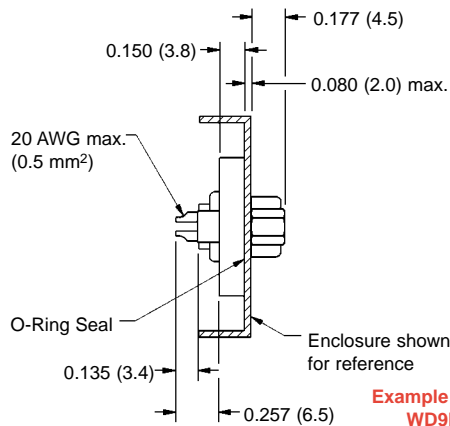


WD37



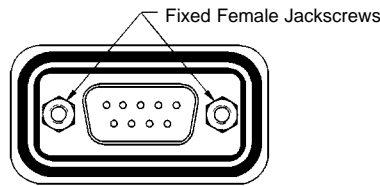
WD50

INSIDE WALL ENCLOSURE MOUNT



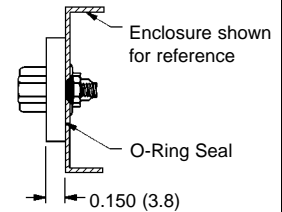
SOLDER CUP CONNECTOR

WITH ENCLOSURE WALL
MOUNT SEALING PLATE
ORDERING CODE 2



Example Part Number:
WD9F2C5AT70

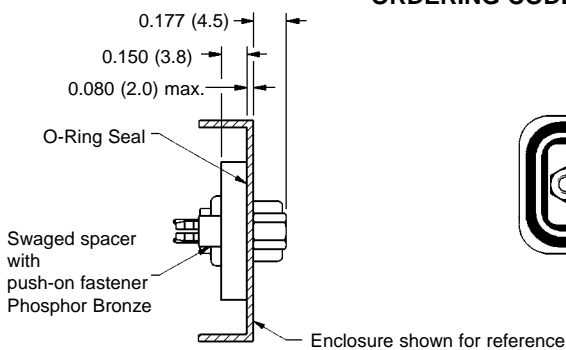
OUTSIDE WALL ENCLOSURE MOUNT



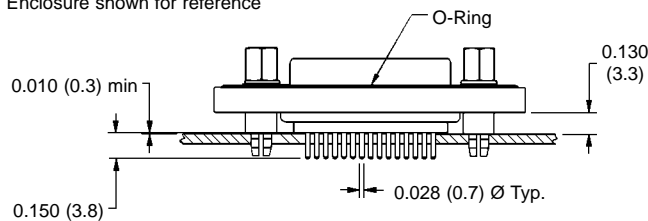
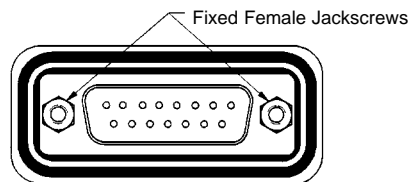
Example Part Number:
WD9F2C9B00

STRAIGHT PRINTED BOARD MOUNT CONNECTOR

INSIDE WALL ENCLOSURE MOUNT

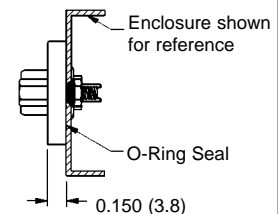


WITH ENCLOSURE WALL MOUNT SEALING PLATE
ORDERING CODE 3, 0.150 (3.8) CONTACT EXTENSION



Example Part Number:
WD15P3C8AT70

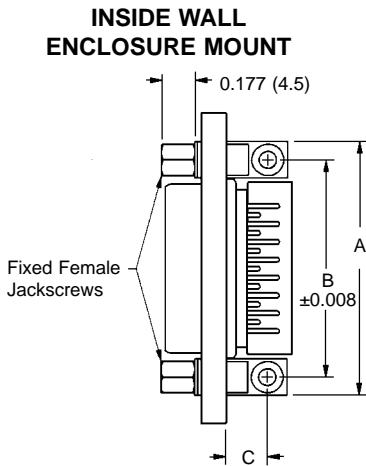
OUTSIDE WALL ENCLOSURE MOUNT



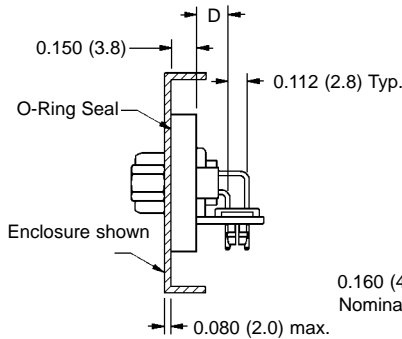
Example Part Number:
WD15P3C9B00

DIMENSIONS ARE IN INCHES (MILLIMETERS).
ALL DIMENSIONS ARE SUBJECT TO CHANGE.

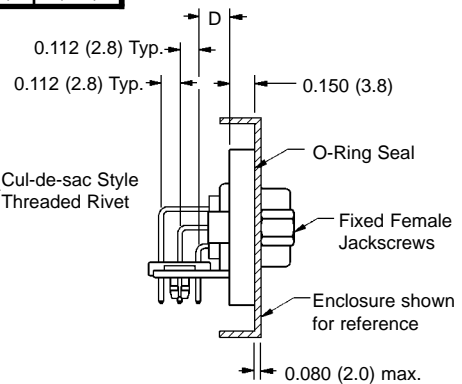
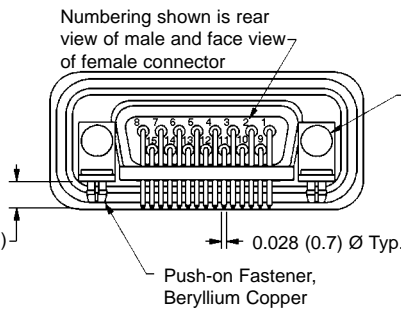
90° PRINTED BOARD MOUNT CONNECTOR WITH ENCLOSURE MOUNT SEALING PLATE ORDERING CODE 5, 0.188 (4.8) CONTACT EXTENSION



WD005C7000 0.188 (4.8) CONTACT EXTENSION				
PART NUMBER	A	B	C	D
WD905C7000	1.204 (30.6)	0.984 (25.0)	0.244 (6.2)	0.188 (4.8)
WD1505C7000	1.532 (38.9)	1.312 (33.3)	0.244 (6.2)	0.188 (4.8)
WD2505C7000	2.072 (52.6)	1.852 (47.0)	0.244 (6.2)	0.188 (4.8)
WD3705C7000	2.720 (69.1)	2.500 (63.5)	0.244 (6.2)	0.188 (4.8)
WD5005C7000	2.626 (66.7)	2.406 (61.1)	0.300 (7.6)	0.188 (4.8)



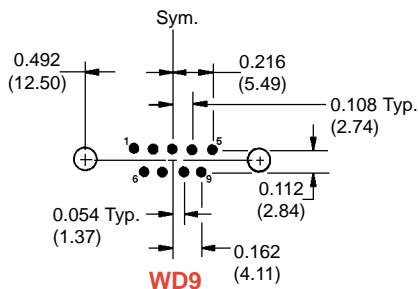
Example Part Number:
WD15P5C7AT70



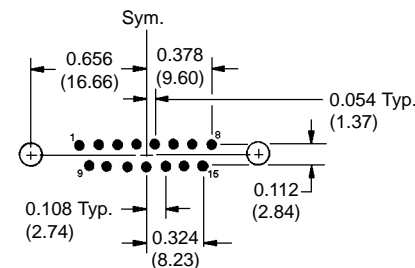
Example Part Number:
WD50P5C7AT70

90° AND STRAIGHT PRINTED BOARD CONTACT HOLE PATTERN

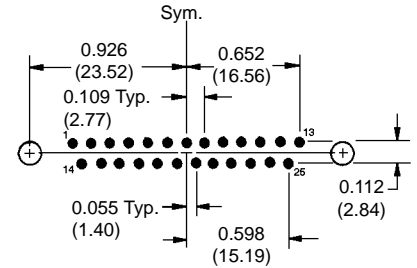
Hole identification shown for male connector, use mirror image for female connector.
 Mount connector with mating face positioned to follow direction of arrows.



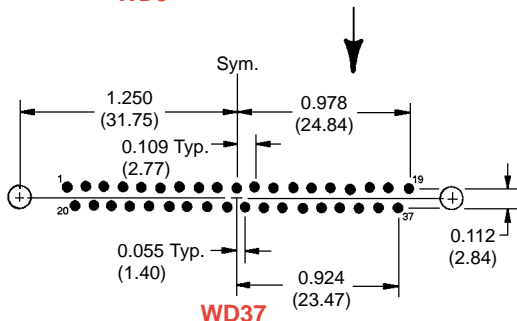
WD9



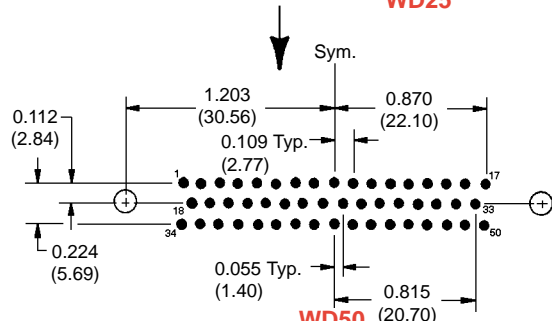
WD15



WD25



WD37



WD50

Suggest 0.045 (1.14) Ø hole for contact termination positions
 Suggest 0.123 ±0.003 (3.12) Ø hole for mounting connector with push-on fasteners

DIMENSIONS ARE IN INCHES (MILLIMETERS).
 ALL DIMENSIONS ARE SUBJECT TO CHANGE.

WIN-DD Series

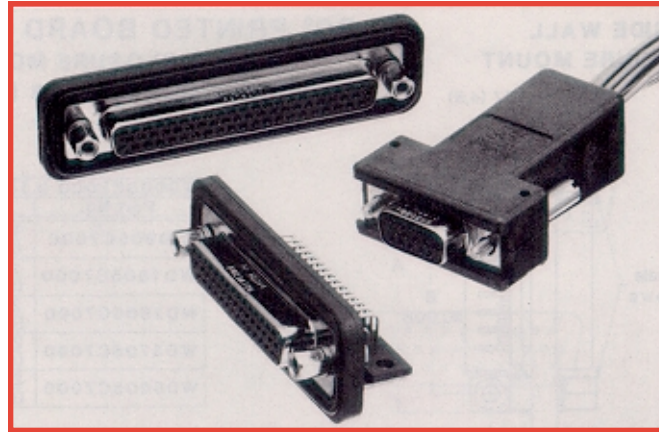
PROFESSIONAL QUALITY, SUBMINIATURE-D CONNECTORS

FOR INDOOR/OUTDOOR NONHAZARDOUS ENVIRONMENTAL APPLICATIONS WHERE PROTECTION FROM DUST, RAIN, HOSE DIRECTED WATER AND LIMITED WATER IMMERSION IS REQUIRED

Size 22 Contacts, Fixed
High Density Connector
Solder Cup and
Printed Board Mount

Professional Quality Connectors
IEC Publication 807-2
Performance Level 2

U.L. Recognized CSA Recognized
File #E49351 File #LR54219
Telecommunication
U.L. File #E140980



The WIN-DD series of high density environmental connector systems achieve water and dust ingress protection capabilities to IP67 by incorporating the following characteristics into the connector designs and production processes: 1) solid metal precision machined contacts. 2) silicon sealing between contacts, connector body and shells, special “cul-de-sac” style splash and rain proof connector mounting and coupling hardware, 3) and a special enclosure wall mount plate with O-ring seal. Interfacial seals are supplied with male connectors.

For extremely harsh environments, or where “**Corrosion Resistance**” is required, the contacts are supplied with extra gold plating thickness and the connector shells and jackscrews are supplied in stainless

steel. For applications where “**Corrosion Protection**” is adequate, contact surfaces are gold flash over nickel with shells and accessories being zinc plated with dichromate seal.

Cable support for free cable connectors is provided by use of a robust hood of composite material or an ingress protected molded cable assembly may be specified.

Five high density contact connector variants are offered in arrangements of 15, 26, 44, 62 and 78 contacts. A variety of solder terminated contacts and “cul-de-sac” accessories are available to meet specific application requirements. Win-DD Series connectors meet IEC 807-2 Performance Level 2 where applicable, and conform dimensionally to MIL-DTL-24308 where applicable.

WIN-DD SERIES TECHNICAL CHARACTERISTICS

ENVIRONMENTAL CHARACTERISTICS:

WIN-DD series connectors mounted on IEC 529 or NEMA 250 enclosures for electrical equipment.

WIN-DD Connector Panel mount sealing plates, when mounted on the walls of enclosures, maintain the dust and water ingress protection rating of IEC 529 or NEMA 250 enclosures on which they are mounted.

WIN-DD connector-enclosure assemblies provide dust and water ingress protection to IP67 which allows

temporary immersion in water to a depth of 0.5 meters for 30 minutes without ingress of water or dust to the enclosure.

Refer to Appendix A for details of IP67 ratings and NEMA enclosure types 6 and 4X, as well as other enclosures having less stringent environmental requirements.

WIN-DD Series Cable Connectors with Cable Support

WIN-DD cable connectors meet the requirements of IEC 807-2 Performance Level 2, where applicable, plus the ingress protection requirements of IP67 thereby maintaining the electrical integrity and the ingress protection level of the connection system.

WIN-DD SERIES TECHNICAL CHARACTERISTICS

ENVIRONMENTAL TEST SPECIFICATIONS

Applicable IEC Moisture Tests

IP65 IEC 529 Test 14.2.5 – Spray nozzle 6.3 mm diameter, delivery rate 12.5 liters per minute, 1 minute duration of connector exposure to spray. When conducting this test on System 1 – Portable Enclosure Connectors, the protective cover must be securely fastened over the face of the connector.

IP67 IEC 529 Test 14.2.7 – Temporary immersion, 0.5 meters for 30 minutes.

Applicable IEC Connector Tests After Moisture Exposure Tests Have Been Performed

IEC 512-2, Test 3a – Insulation Resistance

IEC 512-2, Test 4a – Voltage proof

Limited water immersion testing was performed on virgin connectors before leaving our factory. We recommend that our environmental connectors be retested by our customers after a suitable period of time/temperature conditioning has taken place to determine the suitability of the connector for the application. We cannot predict service life of our connectors for all applications.

MATERIALS AND FINISHES:

Insulator:	Glass filled polyester per MIL-M-24519 UL 94V-0, black color.
Contacts:	Male contacts – precision machined brass alloy or phosphor bronze. Female contacts – precision machined high tensile phosphor bronze.
Contact Plating:	“ Corrosion Protection ”: gold flash over nickel plate. “ Corrosion Resistant ”: gold plate 0.000030 inch (0.8 micron) over nickel plate.
Shells and Jackscrew Systems and Cul-de-sac Mounting Accesories:	“ Corrosion Protected ”: steel, zinc plated with dichromate seal. “ Corrosion Resistant ”: stainless steel passivated.
Push-on Fasteners:	Phosphor bronze with tin plate.
Angle Brackets:	Brass, zinc plate with dichromate seal.
Hoods (Cable supports):	Composite.
Interfacial Seal:	Elastomer or TPE.
Panel Mount Sealing Plate Assembly:	Glass filled thermoplastic with elastomer O-ring.
Protective cover over connector shell:	Conductive polyethylene or conductive polyester.

ELECTRICAL CHARACTERISTICS:

Contact Current Rating:	5 amperes nominal.
Initial Contact Resistance:	0.010 ohms maximum.
Insulator Resistance:	5 G ohms.
Clearance and Creepage Distance (minimum):	0.042 inch (1.06 mm).
Proof Voltage:	1000 V r.m.s.
Working Voltage:	300 V r.m.s.

REQUIREMENTS

No water to have penetrated enclosure through connector.

No water to have penetrated enclosure through connector.

REQUIREMENTS

System 1 – Portable enclosure. 1 G ohm minimum insulation resistance after connector face and contacts are dried. Voltage proof 1,000 V rms.

System 2 – Enclosure mounted connector to cable connector. 1 G ohm minimum insulation resistance. 1,000 V rms. Voltage proof.

System 3 – Cable to cable connection systems. 1 G ohm minimum insulation resistance. 1,000 V rms. Voltage proof.

MECHANICAL CHARACTERISTICS:

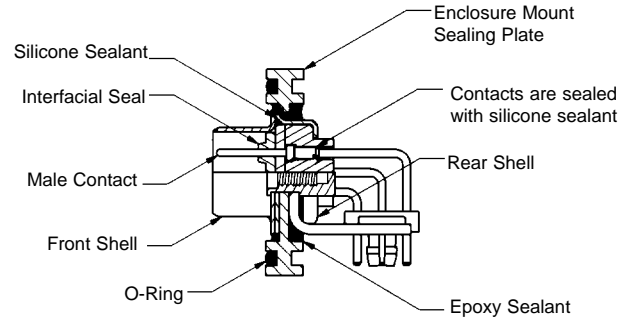
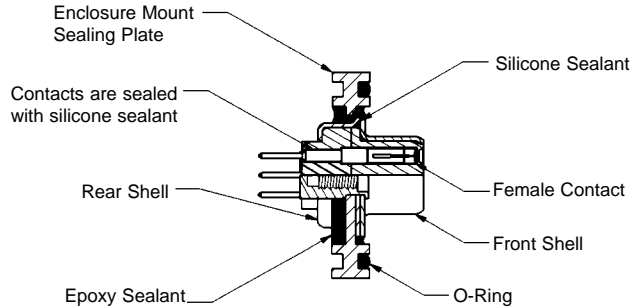
Fixed Contacts:	Size 22 contact, male contact – 0.030 inch (0.75 mm) diameter. Female contact – rugged Robi-D open entry design and closed entry design available.
Contact Retention in Insulator:	9 lbs. (40N)
Resistance to Solder Iron Heat:	500°F (260°C) for 10 seconds duration per IEC 512-6.
Contact Terminations:	Solder cup contacts – 0.035 inch (0.89 mm) minimum hole diameter for 22 AWG (0.3 mm ²) wire maximum. Straight printed board mount – 0.020 inch (0.5 mm) diameter. 90° printed board mount contact terminations 0.030 inch (0.76 mm) diameter. Trapezoidally shaped shells.
Polarization:	
Enclosure Mounting Accessories:	Cul-de-sac blind hole fasteners, angle brackets and push-on fasteners.
Inside Wall Enclosure Mount:	Minimum thickness 0.040 inch (1.0 mm). Maximum thickness 0.080 inch (2.0 mm).
Outside Wall Enclosure Mount:	Minimum thickness 0.040 inch (1.0 mm). Practical maximum limitation 0.200 inch (5.0 mm).
Locking Systems:	Jackscrews.
Mechanical Operations:	250 operations minimum per IEC 512-5 IP67 immersion rated. 500 operations minimum per IEC 512-5 IP65 spray nozzle rated.
Required Sealing Plate Mounting Torque:	1.75 in-lb. (0.20 Nm) minimum. 2.25 in-lb. (0.25 Nm) maximum.

CLIMATIC CHARACTERISTICS:

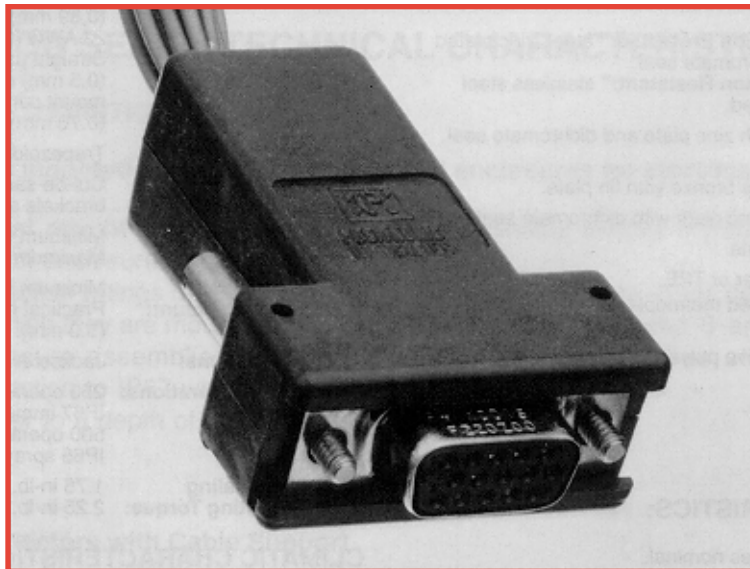
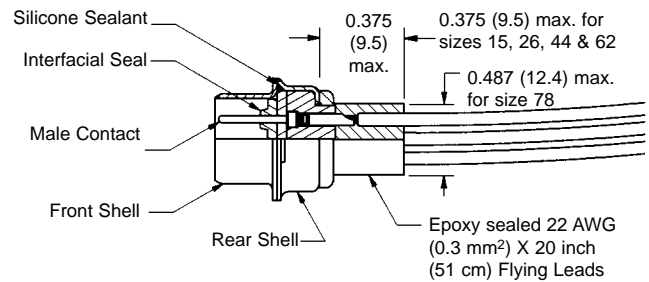
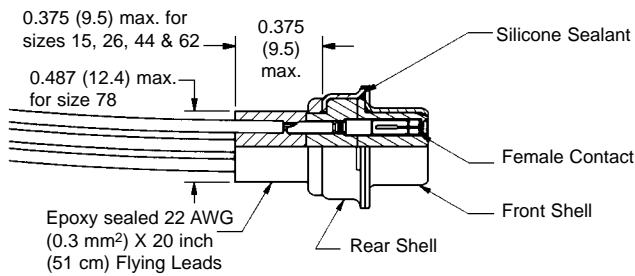
Temperature Range: -25°C to +85°C

WDD SERIES ENVIRONMENTAL SEALING DESIGN FEATURES

**ENCLOSURE MOUNTED CONNECTORS
SYSTEMS 1 AND 2**



**CABLE CONNECTORS
SYSTEMS 2 AND 3**



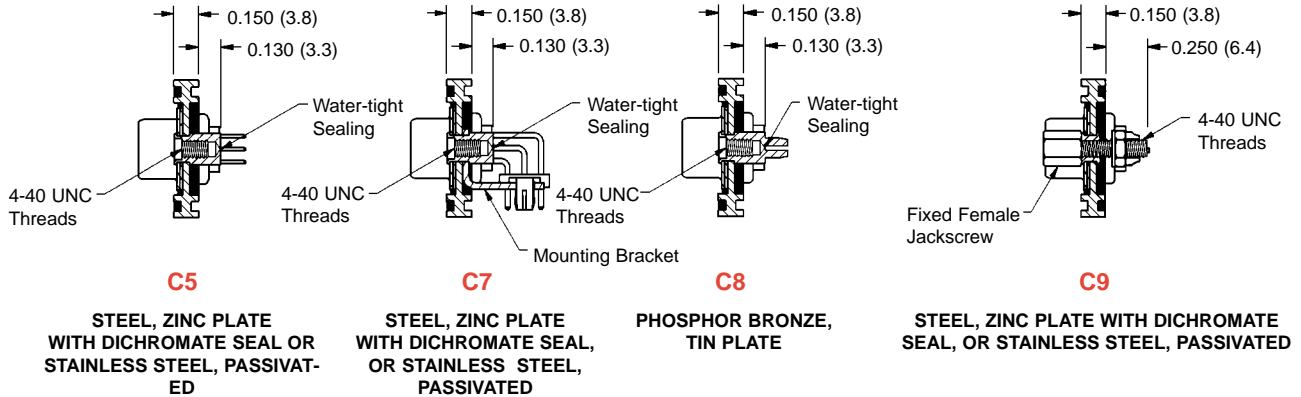
WDD15F220Z00

**DIMENSIONS ARE IN INCHES (MILLIMETERS).
ALL DIMENSIONS ARE SUBJECT TO CHANGE.**

WDD SERIES CUL-DE-SAC STYLE MOUNTING ACCESSORIES

INSIDE WALL ENCLOSURE MOUNT

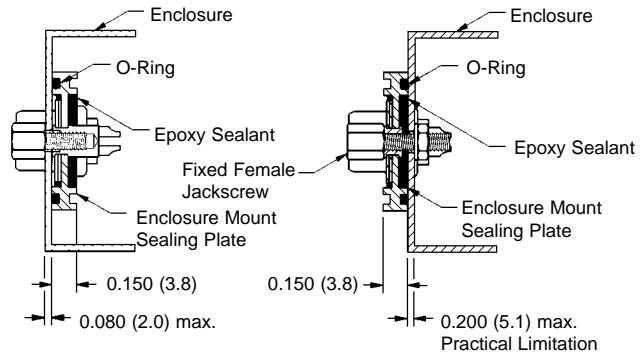
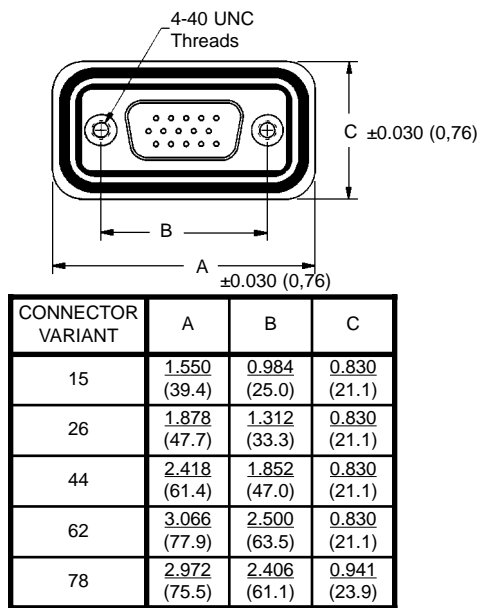
OUTSIDE WALL ENCLOSURE MOUNT



CONNECTOR TO ENCLOSURE WALL MOUNT SEALING PLATE

INSIDE WALL ENCLOSURE MOUNT

OUTSIDE WALL ENCLOSURE MOUNT



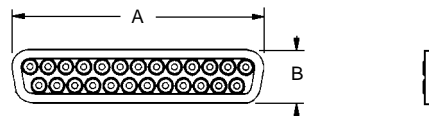
SEALING PLATE MATERIAL: GLASS FILLED THERMOPLASTIC

SEALING PLATE IS MOUNTED TO ENCLOSURE WALL WITH JACKSCREWS TORQUED TO A VALUE OF 1.75 in-lb (0.20 Nm) MINIMUM, 2.25 in-lb (0.25 Nm) MAXIMUM

INTERFACIAL SEAL FURNISHED ON ALL MALE CONNECTORS

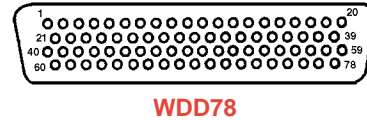
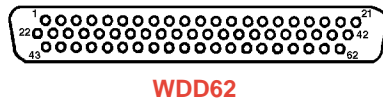
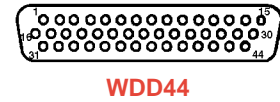
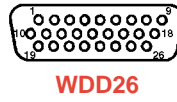
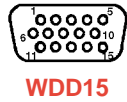
CONNECTOR VARIANT	A	B
15	0.67 (17.0)	0.34 (8.6)
26	1.00 (25.4)	0.34 (8.6)
44	1.53 (38.9)	0.34 (8.6)
62	2.18 (55.4)	0.34 (8.6)
78	2.08 (52.8)	0.45 (11.4)

MATERIAL: ELASTOMER OR TPE

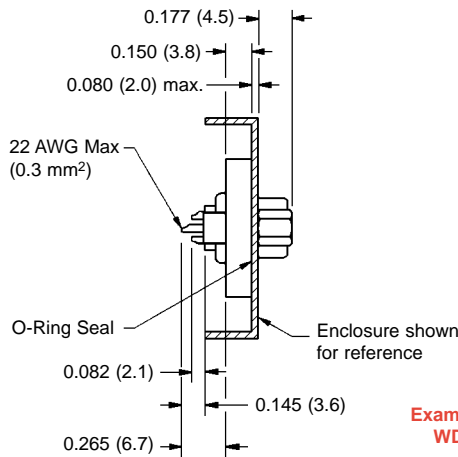


DIMENSIONS ARE IN INCHES (MILLIMETERS). ALL DIMENSIONS ARE SUBJECT TO CHANGE.

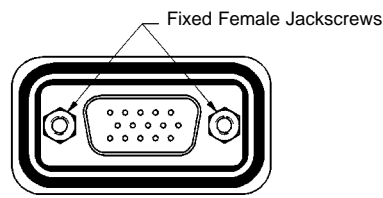
CONTACT VARIANTS FACE VIEW OF MALE CONNECTOR



INSIDE WALL ENCLOSURE MOUNT

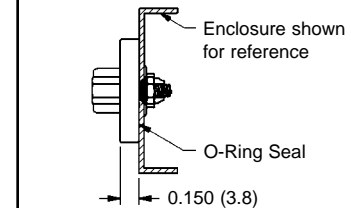


SOLDER CUP CONNECTOR WITH ENCLOSURE WALL MOUNT SEALING PLATE ORDERING CODE 2



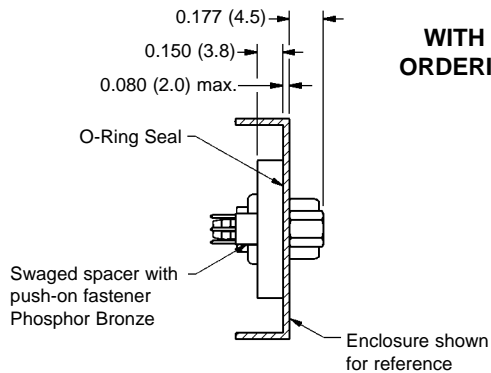
Example Part Number:
WDD15F2C5AT70

OUTSIDE WALL ENCLOSURE MOUNT

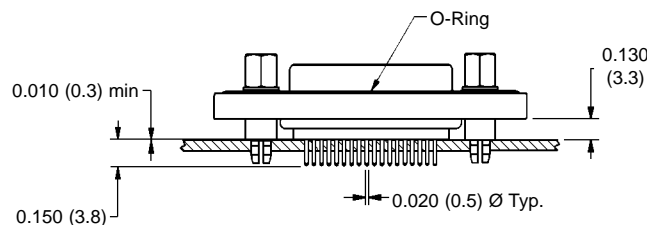
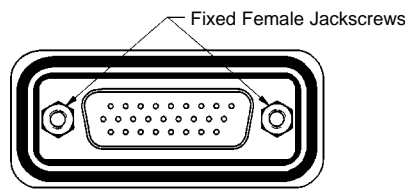


Example Part Number:
WDD15F2C9B00

INSIDE WALL ENCLOSURE MOUNT

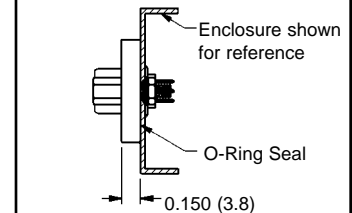


STRAIGHT PRINTED BOARD MOUNT CONNECTOR WITH ENCLOSURE WALL MOUNT SEALING PLATE ORDERING CODE 3, 0.150 (3.8) CONTACT EXTENSION



Example Part Number:
WDD26P3C8AT70

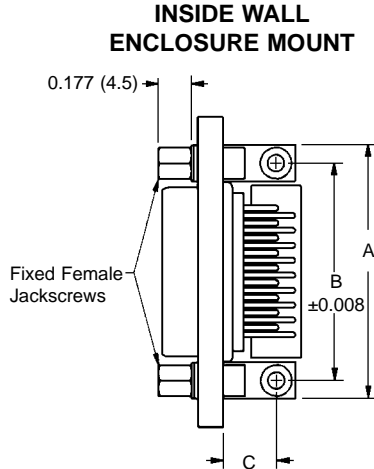
OUTSIDE WALL ENCLOSURE MOUNT



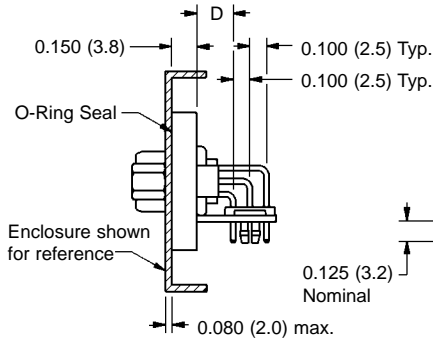
Example Part Number:
WDD26P3C9B00

DIMENSIONS ARE IN INCHES (MILLIMETERS).
 ALL DIMENSIONS ARE SUBJECT TO CHANGE.

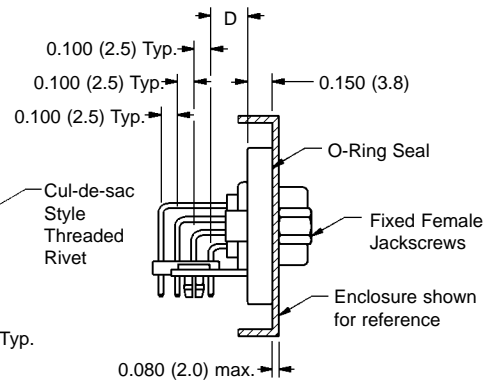
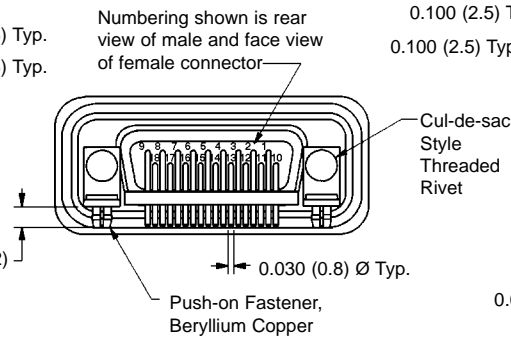
90° PRINTED BOARD MOUNT CONNECTOR
WITH ENCLOSURE MOUNT SEALING PLATE
ORDERING CODE 4, 0.219 (5.6) CONTACT EXTENSION



WDD004C7000 0.219 (5.6) CONTACT EXTENSION				
PART NUMBER	A	B	C	D
WDD1504C7000	1.204 (30.6)	0.984 (25.0)	0.319 (8.1)	0.219 (5.6)
WDD2604C7000	1.532 (38.9)	1.312 (33.3)	0.319 (8.1)	0.219 (5.6)
WDD4404C7000	2.072 (52.6)	1.852 (47.0)	0.319 (8.1)	0.219 (5.6)
WDD6204C7000	2.720 (69.1)	2.500 (63.5)	0.319 (8.1)	0.219 (5.6)
WDD7804C7000	2.626 (66.7)	2.406 (61.1)	0.319 (8.1)	0.219 (5.6)



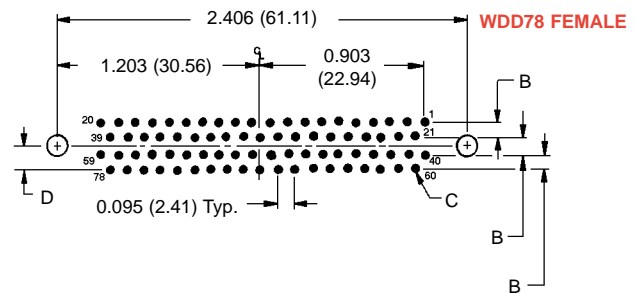
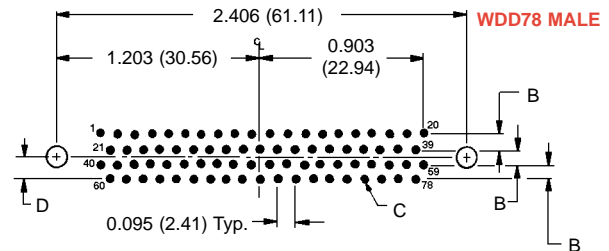
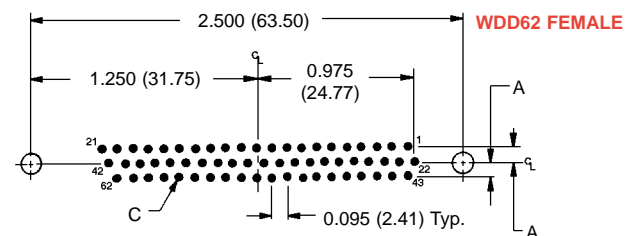
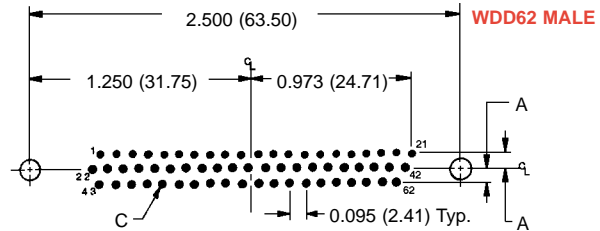
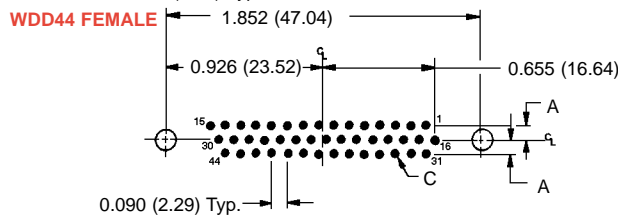
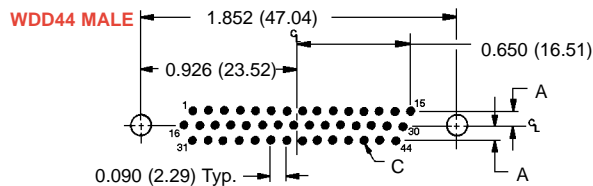
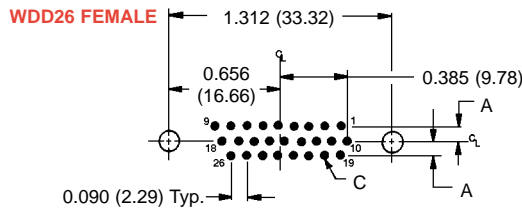
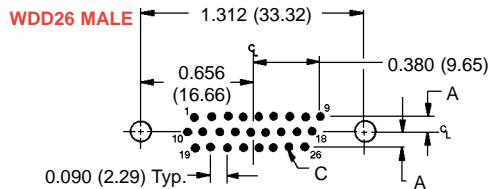
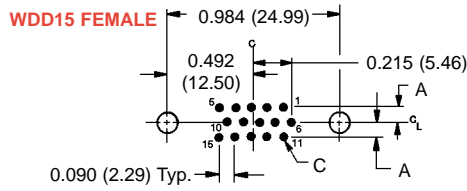
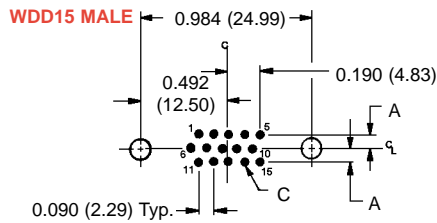
Example Part Number:
WDD26P4C7AT70



Example Part Number:
WDD78P4C7AT70

90° AND STRAIGHT PRINTED BOARD CONTACT HOLE PATTERN

Mount connector with mating face positioned to follow direction of arrows.

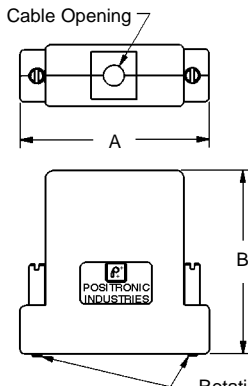


Suggest 0.123 ±0.003 (3.12) Ø holes for mounting connector with push-on fasteners

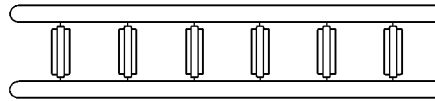
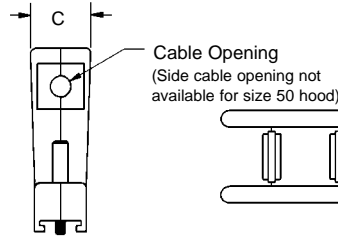
CODE NUMBER	A	B	C	D
4	0.100 (2.54)	0.100 (2.54)	0.045 (1.14)	0.100 (2.54)
3	0.078 (1.98)	0.082 (2.08)	0.035 (0.89)	0.123 (3.12)

DIMENSIONS ARE IN INCHES (MILLIMETERS). ALL DIMENSIONS ARE SUBJECT TO CHANGE.

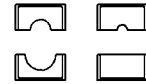
COMPOSITE HOODS WD AND WDD SERIES



COMPOSITE HOOD WITH ROTATING MALE JACKSCREWS (Z) EMI ENVIRONMENT



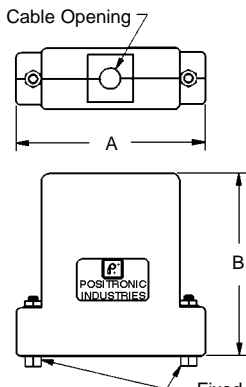
Insert Tree Assembly



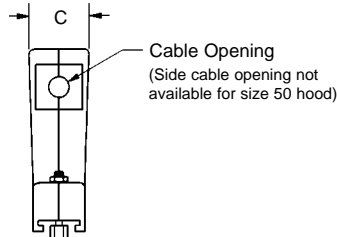
Typical inserts
Various inserts are provided to accommodate different cable sizes

Example Part Number:
D25000Z00

Rotating Male Jackscrews
4-40 UNC Threads, Steel, Zinc plated or Stainless Steel, passivated



COMPOSITE HOOD WITH FIXED FEMALE JACKSCREWS (Z4) EMI ENVIRONMENT



Part Number	A	B	C	Cable Opening	
				Min	Max
D9000Z00	1.387	1.935	0.735	0.100	0.400 x 0.570
D9000Z400	(35.2)	(49.1)	(18.7)	(2.5)	(10.2) x (14.5)
D15000Z00	1.715	1.935	0.735	0.100	0.400 x 0.570
D15000Z400	(43.6)	(49.1)	(18.7)	(2.5)	(10.2) x (14.5)
D25000Z00	2.254	2.200	0.735	0.100	0.550 x 0.570
D25000Z400	(57.3)	(55.9)	(18.7)	(2.5)	(14.0) x (14.5)
D37000Z00	2.903	2.200	0.735	0.100	0.550 x 0.570
D37000Z400	(73.7)	(55.9)	(18.7)	(2.5)	(14.0) x (14.5)
D50000Z00	2.809	2.700	0.900	0.100	Ø 0.630
D50000Z400	(71.3)	(68.58)	(22.86)	(2.5)	(16.00)

Example Part Number:
D25000Z400

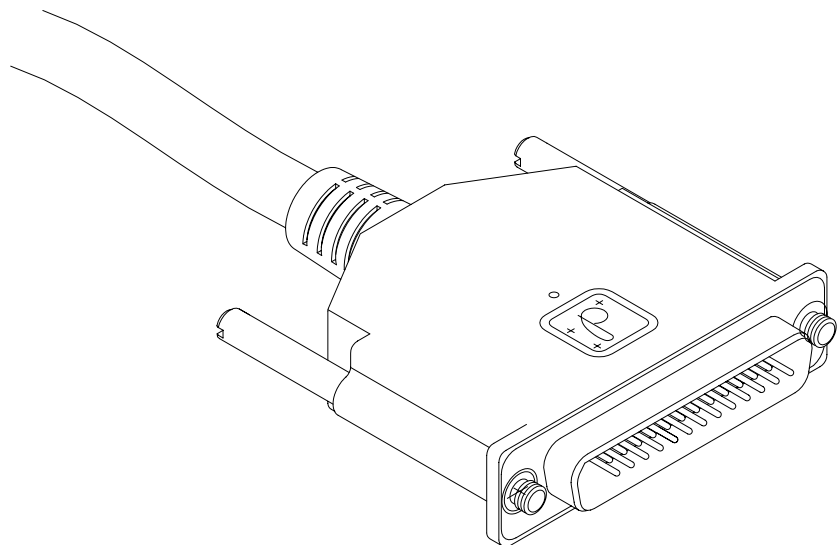
Fixed Female Jackscrews
4-40 UNC Threads, Steel, Zinc plated or Stainless Steel, passivated

Material: Composite, conductive volume resistivity (1.0 OHM-cm max)
Attenuation: 40+ decibels

MOLDED CABLE ASSEMBLY

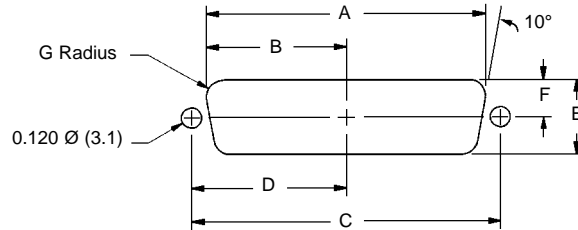
**EMI ENVIRONMENT INGRESS PROTECTION CODE IP67
WD AND WDD SERIES**

Contact factory customer service department for ordering information



DIMENSIONS ARE IN INCHES (MILLIMETERS).
ALL DIMENSIONS ARE SUBJECT TO CHANGE.

ENCLOSURE WALL CUTOUT FOR CONNECTORS
WD SERIES AND WDD SERIES

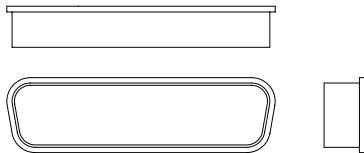


SHELL SIZE	WD	WDD	MOUNTING	A ±0.005	B ±0.005	C ±0.005	D ±0.005	E ±0.005	F ±0.005	G ±0.002
1	9	15	Inside Wall	0.806 (20.5)	0.403 (10.2)	0.984 (25.0)	0.492 (12.5)	0.449 (11.4)	0.225 (5.7)	0.132 (3.4)
			Outside Wall	0.874 (22.2)	0.437 (11.1)	0.984 (25.0)	0.492 (12.5)	0.513 (13.0)	0.257 (6.5)	0.083 (2.1)
2	15	26	Inside Wall	1.134 (28.8)	0.567 (14.4)	1.312 (33.3)	0.656 (16.7)	0.449 (11.4)	0.225 (5.7)	0.132 (3.4)
			Outside Wall	1.202 (30.5)	0.601 (15.3)	1.312 (33.3)	0.656 (16.7)	0.513 (13.0)	0.257 (6.5)	0.083 (2.1)
3	25	44	Inside Wall	1.674 (42.5)	0.837 (21.3)	1.852 (47.0)	0.926 (23.5)	0.449 (11.4)	0.225 (5.7)	0.132 (3.4)
			Outside Wall	1.743 (44.3)	0.872 (22.2)	1.852 (47.0)	0.926 (23.5)	0.513 (13.0)	0.257 (6.5)	0.083 (2.1)
4	37	62	Inside Wall	2.326 (59.1)	1.163 (29.5)	2.500 (63.5)	1.250 (31.8)	0.449 (11.4)	0.225 (5.7)	0.132 (3.4)
			Outside Wall	2.391 (60.7)	1.196 (30.4)	2.500 (63.5)	1.250 (31.8)	0.513 (13.0)	0.257 (6.5)	0.083 (2.1)
5	50	78	Inside Wall	2.218 (56.3)	1.109 (28.2)	2.406 (61.1)	1.203 (30.6)	0.555 (14.1)	0.278 (7.1)	0.132 (3.4)
			Outside Wall	2.297 (58.3)	1.149 (29.2)	2.406 (61.1)	1.203 (30.6)	0.623 (15.8)	0.312 (7.9)	0.083 (2.1)

PROTECTIVE COVER

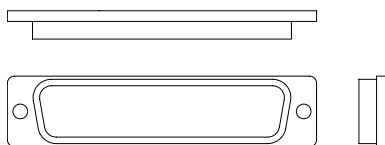
SUPPLIED AS STANDARD WITH ALL CONNECTORS
WD, WDD AND EVD SERIES

COVER WITHOUT EARS
(FOR CONNECTORS WITHOUT FIXED JACKSCREWS)



MATERIAL: CONDUCTIVE POLYETHYLENE
COLOR: BLACK

COVER WITH EARS
(FOR CONNECTORS WITH FIXED JACKSCREWS)



MATERIAL: CONDUCTIVE POLYESTER
COLOR: BLACK

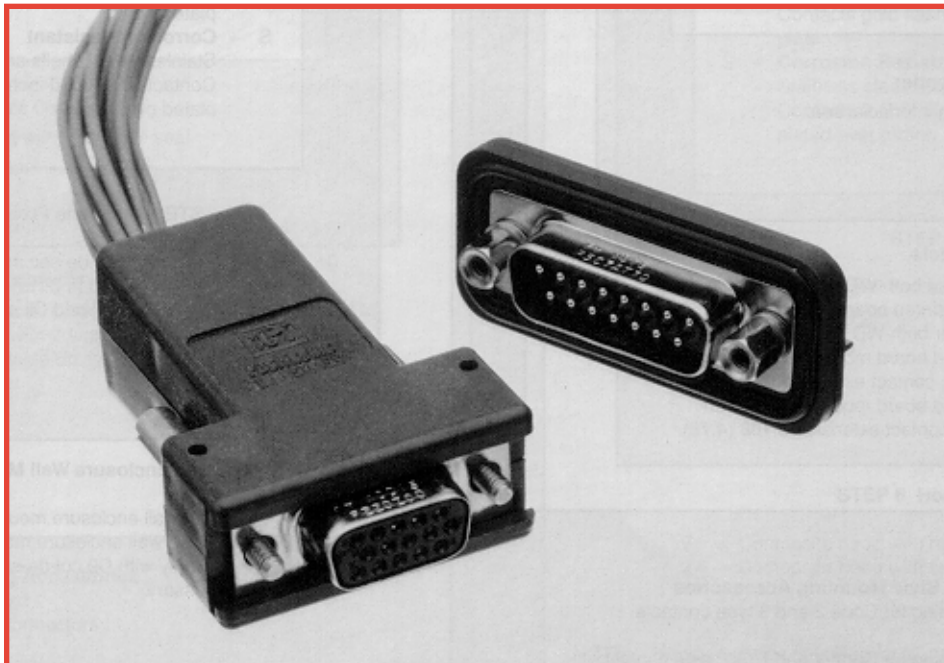
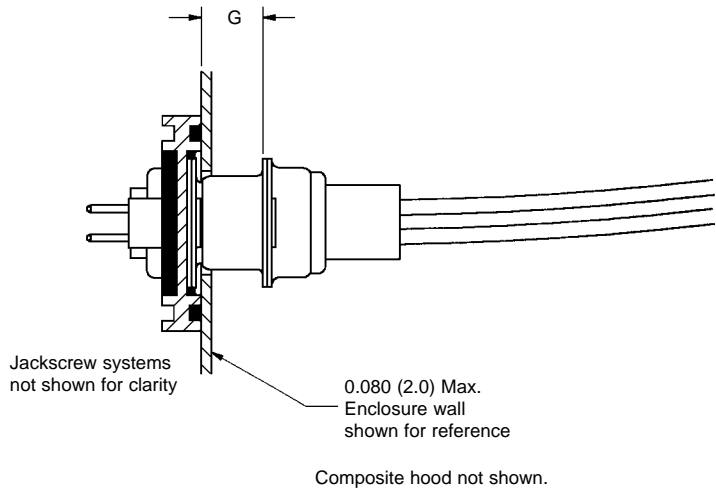
WD EVD	WDD	REPLACEMENT PART NUMBER WITHOUT EARS	REPLACEMENT PART NUMBER WITH EARS
9M	15M	4931-9-0-0	4931-9-100-0
9F	15F	4932-9-0-0	4932-9-100-0
15M	26M	4931-15-0-0	4931-15-100-0
15F	26F	4932-15-0-0	4932-15-100-0
25M	44M	4931-25-0-0	4931-25-100-0
25F	44F	4932-25-0-0	4932-25-100-0
37M	62M	4931-37-0-0	4931-37-100-0
37F	62F	4932-37-0-0	4932-37-100-0
50M	78M	4931-50-0-0	4931-50-100-0
50F	78F	4932-50-0-0	4932-50-100-0

DIMENSIONS ARE IN INCHES (MILLIMETERS).
ALL DIMENSIONS ARE SUBJECT TO CHANGE.

**INFORMATION RELATIVE TO COUPLING OF
WD,WDD AND EVD SERIES CONNECTORS**

**RECOMMENDED COUPLING DIMENSION TO
ENSURE WATER AND DUST INGRESS PROTECTION**

SHELL SIZE	WD EVD	WDD	G	
			MIN.	MAX.
1	9	15	0.230 (5.8)	0.260 (6.6)
2	15	26	0.230 (5.8)	0.260 (6.6)
3	25	44	0.221 (5.6)	0.251 (6.4)
4	37	62	0.221 (5.6)	0.251 (6.4)
5	50	78	0.221 (5.6)	0.251 (6.4)



WDD15F220Z00

WD15P5C7AT70

DIMENSIONS ARE IN INCHES (MILLIMETERS).
ALL DIMENSIONS ARE SUBJECT TO CHANGE.

**ENCLOSURE MOUNTED CONNECTORS
FOR SYSTEMS 1 & 2 ORDERING INFORMATION**

ORDERING INFORMATION – CODE NUMBERING SYSTEM

For Systems 1 & 2 Enclosure Mounted Connectors

WD and WDD Series

STEP	1	2	3	4	5	6	7	8	9
Example Part Number	WD	9	P	2	C5	A	T7	S	
Example Part Number	WDD	15	P	2	C5	A	T7	S	
STEP 1 - Basic Series WD and WDD Series									STEP 9 - Special Options Consult Sales Department.
STEP 2 - Connector Variants WD Series Connector Variants 9, 15, 25, 37 and 50 *WDD Series Connector Variants 15, 26, 44, 62 and 78									STEP 8 - Shell And Accessory Options 0 - Corrosion Protected Steel shells and jackscrews zinc plated with dichromate seal. Contacts gold flash over nickel plate. S - Corrosion Resistant Stainless steel shells and jackscrews. Contacts 0.000030 inch (0.8µ) gold plated over nickel.
STEP 3 - Connector Gender P – Male contact with interfacial seal F – Female contact									STEP 7 - Female Fixed Jackscrews 0 - Select 0 when C9 cul-de-sac mounting accessory is specified in STEP 5. T7 - Mandatory for C5, C7 and C8 cul-de-sac mounting accessories.
STEP 4 - Type of Contacts 2 - Solder cup, use for both WD and WDD series. 3 - Solder, straight printed board mount with 0.150 (3.81) tail length. Use for both WD and WDD series. 4 - Solder 90° printed board mount, for use with WDD series only, contact extension 0.219 (5.56). 5 - Solder 90° printed board mount, for use with WD series only, contact extension 0.188 (4.78).									STEP 6 - Enclosure Wall Mount Sealing Plate A - Inside wall enclosure mounted connector. B - Outside wall enclosure mounted connector. Use only with C9 cul-de-sac mounting accessory.
STEP 5 - CUL-DE-SAC Style Mounting Accessories C5 - Inside wall mounting for Code 2 and 3 type contacts only. C7 - Inside wall mounting for Code 4 and 5, 90° type contact printed board mount only. Consists of an assembly of angle bracket, alignment bar and push-on fastener. C8 - Inside wall mounting for Code 3 type contacts only. Includes push-on fastener. C9 - Outside wall mounting for Code 2 and 3 solder contacts only. Includes fixed female jackscrews.									*Contact factory for availability of WDD 62 and 78 contact variants.

FREE CABLE CONNECTION ORDERING INFORMATION

ORDERING INFORMATION – CODE NUMBERING SYSTEM

**Cable Connectors Compatible with Enclosure Mounted Connectors
of System 2 and Cable-to-Cable Connectors of
Connection System 3**

WD and WDD Series

STEP	1	2	3	4	5	6	7	8	9	
Example Part Number	WD	9	P	22	0	Z	0	S		
Example Part Number	WDD	15	P	22	0	Z	0	S		
STEP 1 - Basic Series WD and WDD Series									STEP 9 - Special Options See page 22	
STEP 2 - Connector Variants WD Series Connector Variants 9, 15, 25, 37 and 50 *WDD Series Connector Variants 15, 26, 44, 62 and 78									STEP 8 - Shell And Accessory Options 0 - Corrosion Protected Steel shells and jackscrews zinc plated with dichromate seal. Contacts gold flash over nickel plate. S - Corrosion Resistant Stainless steel shells and jackscrews. Contacts 0.000030 inch (0.8µ) gold plated over nickel.	
STEP 3 - Connector Gender P – Male contact with interfacial seal F – Female contact									STEP 7 - Locking Device 0 - None required. Self contained in hood P/N	
STEP 4 - Type of Contacts 22 - Solder contacts, soldered to wire and encapsulated in epoxy resin with 20 inch (50 cm) flying leads. Other lengths available on special order.									STEP 6 - Hoods Z - Composite hood with rotating male jackscrews Z4 - Composite hood with fixed female jackscrews	
STEP 5 - Mounting Accessories 0 - None required Free cable connectors									NOTE: Hoods must be specified for all cable connectors *Contact factory for availability of WDD 62 and 78 contact variants.	

**WD & WDD SERIES
PART NUMBER SUFFIX (STEP 9) FOR PREWIRED CABLE ASSEMBLIES**

SERIES	PLATING	COLOR	GAUGE	LENGTH	TOL.																								
WD or WDD Omit if standard plating is required. Contact factory for special plating options.	XX	C	24G	3.05	T20 Omit if standard tolerance (refer to TABLE 1) is used. Otherwise, insert Txx. xx=±tolerance in mm.																								
Omit if black insulation (standard) is required for all wires. Otherwise, insert a C in this position to select the colored wire option. This option consists of up to 10 different wire insulation colors prewired in the following configuration:			Omit if 20 inch (0.51m) standard length is required. Otherwise, insert length in meters (0.3048 X length in feet) to two decimal places. Use leading 0 if less than unity.																										
<table border="0"> <thead> <tr> <th>Contact Position Number</th> <th>Insulation Color</th> <th>Contact Position Number</th> <th>Insulation Color</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Brown</td> <td>6</td> <td>Blue</td> </tr> <tr> <td>2</td> <td>Red</td> <td>7</td> <td>Violet</td> </tr> <tr> <td>3</td> <td>Orange</td> <td>8</td> <td>Gray</td> </tr> <tr> <td>4</td> <td>Yellow</td> <td>9</td> <td>White</td> </tr> <tr> <td>5</td> <td>Green</td> <td>0</td> <td>Black</td> </tr> </tbody> </table>			Contact Position Number	Insulation Color	Contact Position Number	Insulation Color	1	Brown	6	Blue	2	Red	7	Violet	3	Orange	8	Gray	4	Yellow	9	White	5	Green	0	Black	<p>For WD Series only:</p> <p>Omit if standard 20 AWG wire is required. Otherwise, insert either 22G if 22 AWG wire is required or 24G if 24 AWG wire is required.</p> <p>For WDD Series only:</p> <p>Omit if standard 22 AWG wire is required. Otherwise, insert 24G if 24 AWG wire is required.</p>		
Contact Position Number	Insulation Color	Contact Position Number	Insulation Color																										
1	Brown	6	Blue																										
2	Red	7	Violet																										
3	Orange	8	Gray																										
4	Yellow	9	White																										
5	Green	0	Black																										
The contact position numbers indicated above represent the last digit of the contact position number.			<p>NOTE:</p> <p>When ordering Enclosure Mounted Connectors for Systems 1 & 2, if solder cup contacts with soldered leads are required, insert code 23 in STEP 4 of catalog part number. These contacts are not encapsulated.</p>																										
<p>STANDARD WIRE SPECIFICATION:</p> <p>DESCRIPTION: Stranded Tinned Copper (7/30-22AWG and 7/28-20 AWG), PVC Insulation.</p> <p>CHARACTERISTICS: Per MIL-W-16878/1-PVC, Temperature Rating: -55°C to +105°C Voltage Rating: 600 Volts</p>																													

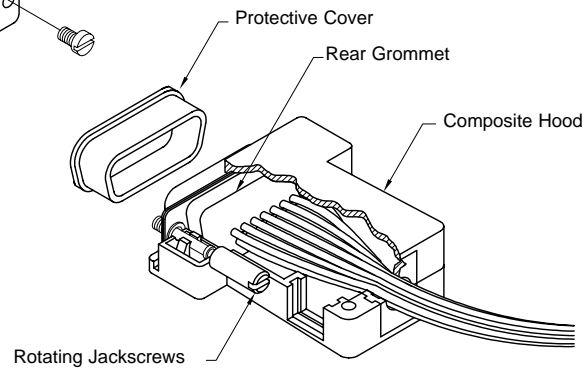
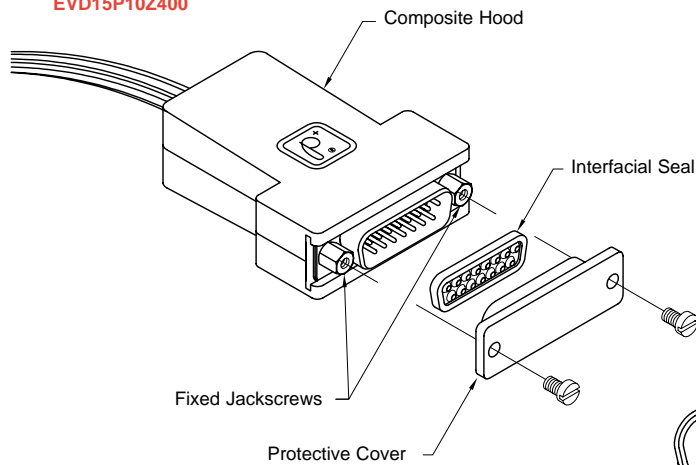
TABLE 1. CABLE LENGTH TOLERANCE

Spec.	Cable Length (meters)			
	≤1 m	>1 m, ≤8 m	>8 m, ≤16 m	>16 m
Tolerance (mm)	±25	±50	±75	±100

**INGRESS PROTECTION CONNECTION SYSTEM 3
CABLE TO CABLE FREE CONNECTORS**

MALE CONNECTOR

Example Part Number:
EVD15P10Z400



Example Part Number:
EVD15F10Z00

FEMALE CONNECTOR

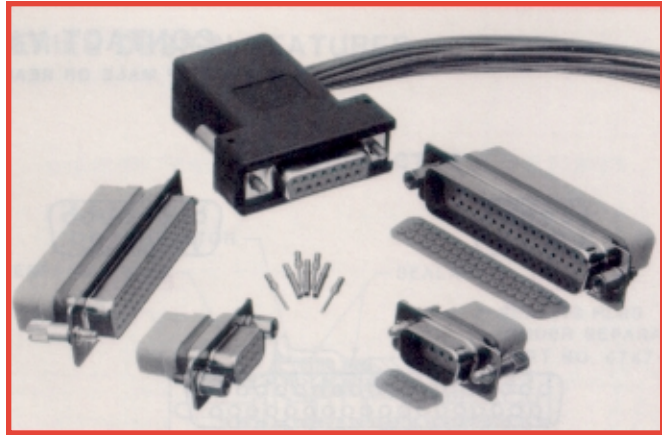
Environmental-D Series

MILITARY QUALITY, REMOVABLE CONTACT, SUBMINIATURE-D CONNECTORS

FOR MILITARY AND SEVERE INDUSTRIAL ENVIRONMENTAL APPLICATIONS

Size 20 Contacts
Solder and Crimp
Removable

Military Quality and
Severe Industrial
Environmental Applications



Environmental-D Series connectors were designed specifically for severe environmental applications where the connector may be subjected to high humidity conditions, rain and/or immersed in water or organic liquids. Environmental protection of the connector is provided by the fluorosilicone grommet, interfacial seal and bonded connector components.

The connectors and contacts are compatible with

MIL-DTL-24308 and MIL-C-39029.

EVD Series connectors utilize precision machined contacts with closed crimp barrel terminations and solder wire terminations. Female contacts are of closed entry design featuring a stainless steel shroud or an "open entry" Robi-D design. Cable support and locking system accessories are available.

ENVIRONMENTAL-D SERIES TECHNICAL CHARACTERISTICS

MATERIALS AND FINISHES:

Insulator:	Glass-filled DAP per ASTM-D-5948 type SDG-F, UL 94V-0, green color.
Contacts:	Male contacts - precision machined brass alloy. Female contacts - precision machined high tensile copper alloy with stainless steel shroud or Robi-D "open entry" style.
Contact Plating:	Military performance - 0.000050 inch (1.25 microns) gold over copper plate. Industrial performance - 0.000030 inch (0.75 microns) gold over nickel.
Shells:	Steel or brass with zinc plate with dichromate seal and stainless steel, passivated.
Mounting Spacers:	Steel or brass, zinc plate with dichromate seal.
Jackscrew Systems:	Steel with zinc plate and dichromate seal and stainless steel, passivated.
Hoods:	Composite.
Grommet and Interfacial Seal:	Fluorosilicone Rubber per MIL-R-25988.
Bonding Material:	Fluorosilicone based sealant/adhesive.
Sealing Plug:	Teflon.

ELECTRICAL CHARACTERISTICS:

Dry Conditions, Basic Connector Body:

Contact Current Rating:	7.5 amperes, nominal.
Initial Contact Resistance:	0.005 ohms maximum.
Proof Voltage:	1,000 V r.m.s.
Insulation Resistance:	5 G ohms.
Clearance and Creepage Distance (minimum):	0.039 inch (1.0 mm).
Working Voltage:	300 V r.m.s.

MECHANICAL CHARACTERISTICS:

Removable Contacts:	Insert contact to rear face of insulator and release from rear face of insulator. Size 20 contact, male - 0.040 inch (1.0 mm) diameter; female - closed entry design with stainless steel shroud or Robi-D "open entry" style.
Contact Retention in Insulator:	9 lbs. (40 N).
Contact Terminations:	Closed barrel crimp, wire sizes 20 AWG (0.5 mm ²) through 24 AWG (0.25 mm ²); Solder contacts - 0.042 inch (1.06 mm) minimum hole diameter for 20 AWG (0.5 mm ²) through 24 AWG (0.25 mm ²) wire size.
Polarization:	Trapezoidally shaped shells.
Locking Systems:	Jackscrews.
Mechanical Operations:	500 operations minimum per IEC 512-5.

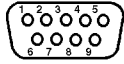
ENVIRONMENTAL CHARACTERISTICS:

EVD Connectors, having crimp contacts, meet all of the applicable requirements of MIL-DTL-24308 in addition to the requirements shown below:

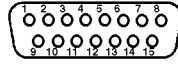
Test	Requirements
Humidity Per MIL-STD 1344, Method 1002.2, Type II.	1) No deterioration of performance. 2) Insulation resistance greater than 100 megaohms. 3) Withstand a potential of 1000 VAC (rms) without evidence of flashover or breakdown.
Fluid Immersion Per ANSI/EIA-364-10 Test Conditions A and D.	1) No detrimental damage. 2) Meet mating and unmating requirements of MIL-DTL-24308.
Immersion, 2 hours at a depth of 36 inch (914.4 mm) in mated condition per MIL-STD 810 Method 512.3. Procedure 1.	While Immersed: 1) Insulation resistance greater than 100 megaohms. 2) Withstand a potential of 1000 VAC (rms) without evidence of flashover or breakdown.
Temperature Range:	-55°C to +125°C.

CONTACT VARIANTS

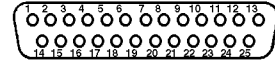
FACE VIEW OF MALE OR REAR VIEW OF FEMALE



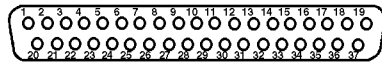
EVD9



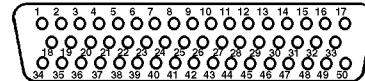
EVD15



EVD25



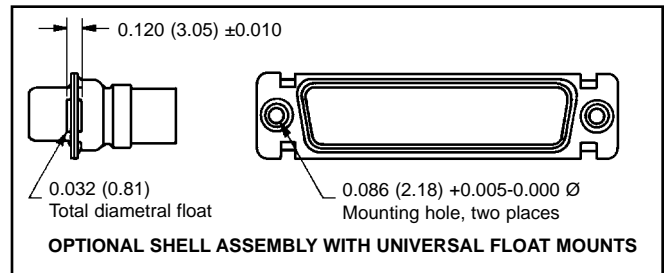
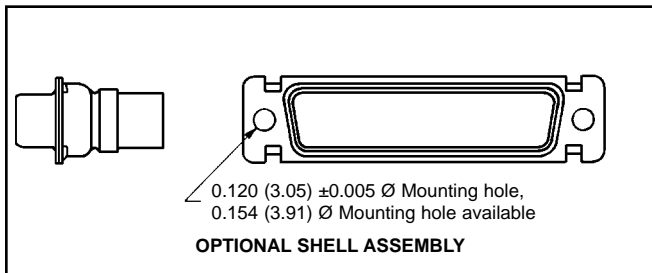
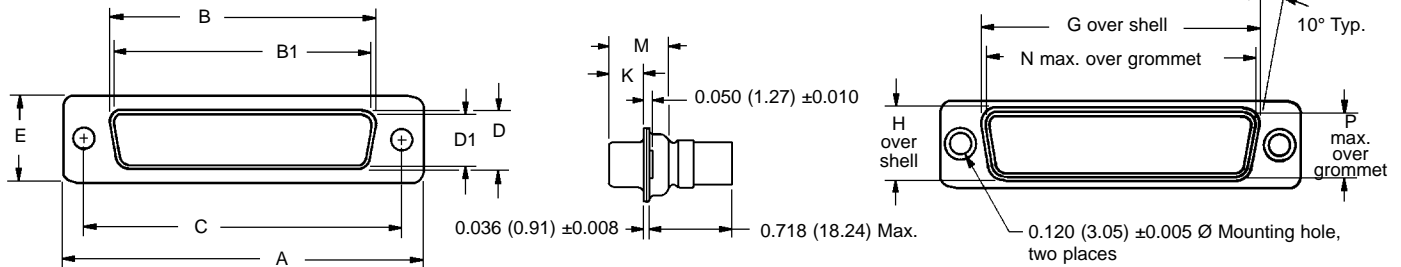
EVD37



EVD50

STANDARD SHELL ASSEMBLY

WITH REAR GROMMET
SOLDER AND CRIMP REMOVABLE CONTACTS

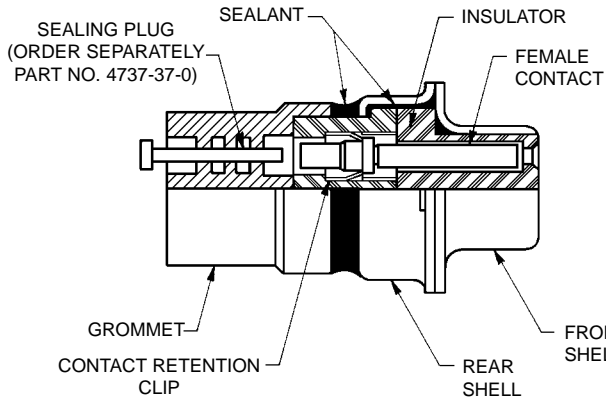


CONNECTOR VARIANT SIZES	A ±0.015	B ±0.005	B1 ±0.005	C ±0.005	D ±0.005	D1 ±0.005	E ±0.015	G ±0.010	H ±0.010	K ±0.005	M ±0.010	N Max.	P Max.
EVD 9 M	1.213 (30.81)		0.666 (16.92)	0.984 (24.99)		0.329 (8.36)	0.494 (12.55)	0.759 (19.28)	0.422 (10.72)	0.233 (5.92)	0.422 (10.72)	0.769 (19.53)	0.432 (10.97)
EVD 9 F	1.213 (30.81)	0.643 (16.33)		0.984 (24.99)	0.311 (7.90)		0.494 (12.55)	0.759 (19.28)	0.422 (10.72)	0.243 (6.17)	0.429 (10.90)	0.769 (19.53)	0.432 (10.97)
EVD 15 M	1.541 (39.14)		0.994 (25.25)	1.312 (33.32)		0.329 (8.36)	0.494 (12.55)	1.083 (27.51)	0.422 (10.72)	0.233 (5.92)	0.422 (10.72)	1.093 (27.76)	0.432 (10.97)
EVD 15 F	1.541 (39.14)	0.971 (24.66)		1.312 (33.32)	0.311 (7.90)		0.494 (12.55)	1.083 (27.51)	0.422 (10.72)	0.243 (6.17)	0.429 (10.90)	1.093 (27.76)	0.432 (10.97)
EVD 25 M	2.088 (53.04)		1.534 (38.96)	1.852 (47.04)		0.329 (8.36)	0.494 (12.55)	1.625 (41.28)	0.422 (10.72)	0.230 (5.84)	0.426 (10.82)	1.635 (41.53)	0.432 (10.97)
EVD 25 F	2.088 (53.04)	1.511 (38.38)		1.852 (47.04)	0.311 (7.90)		0.494 (12.55)	1.625 (41.28)	0.422 (10.72)	0.243 (6.17)	0.429 (10.90)	1.635 (41.53)	0.432 (10.97)
EVD 37 M	2.729 (69.32)		2.182 (55.42)	2.500 (63.50)		0.329 (8.36)	0.494 (12.55)	2.272 (57.71)	0.422 (10.72)	0.230 (5.84)	0.426 (10.82)	2.282 (57.96)	0.432 (10.97)
EVD 37 F	2.729 (69.32)	2.159 (54.84)		2.500 (63.50)	0.311 (7.90)		0.494 (12.55)	2.272 (57.71)	0.422 (10.72)	0.243 (6.17)	0.429 (10.90)	2.282 (57.96)	0.432 (10.97)
EVD 50 M	2.635 (66.93)		2.079 (52.81)	2.406 (61.11)		0.441 (11.20)	0.605 (15.37)	2.178 (55.32)	0.534 (13.56)	0.230 (5.84)	0.426 (10.82)	2.188 (55.58)	0.544 (13.82)
EVD 50 F	2.635 (66.93)	2.064 (52.43)		2.406 (61.11)	0.423 (10.74)		0.605 (15.37)	2.178 (55.32)	0.534 (13.56)	0.243 (6.17)	0.429 (10.90)	2.188 (55.58)	0.544 (13.82)

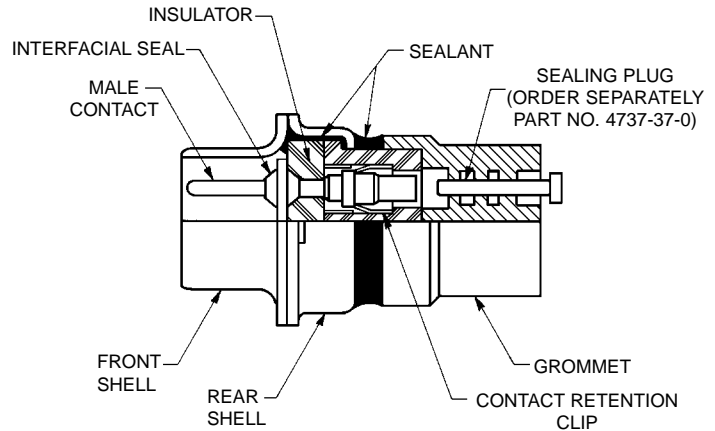
DIMENSIONS ARE IN INCHES (MILLIMETERS).
ALL DIMENSIONS ARE SUBJECT TO CHANGE.

ENVIRONMENTAL - D SERIES DESIGN FEATURES

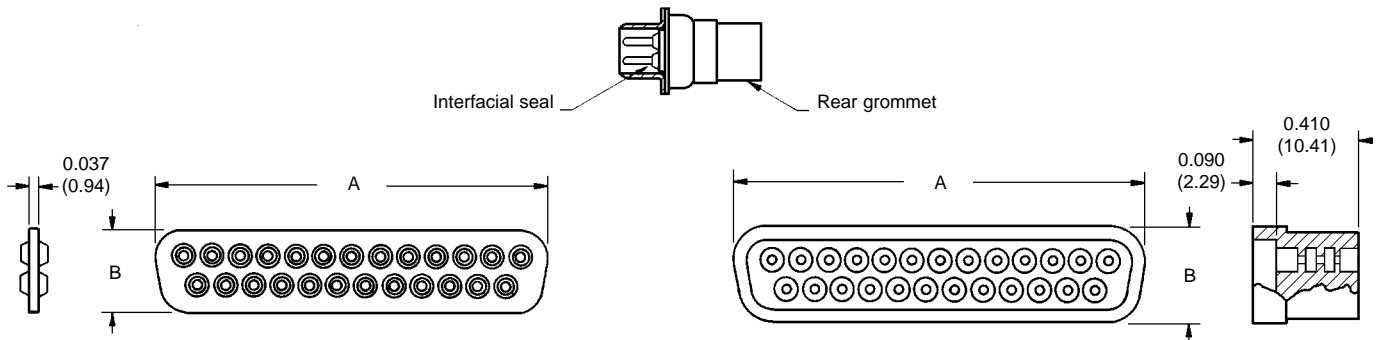
FEMALE CONNECTOR



MALE CONNECTOR



INTERFACIAL SEALS AND REAR GROMMETS



CONNECTOR VARIANT	A	B
9	0.650 (16.51)	0.318 (8.08)
15	0.978 (24.84)	0.318 (8.08)
25	1.513 (38.43)	0.318 (8.08)
37	2.156 (54.76)	0.318 (8.08)
50	2.058 (52.27)	0.425 (10.80)

CONNECTOR VARIANT	A	B
9	0.725 (18.42)	0.375 (9.53)
15	1.051 (26.70)	0.375 (9.53)
25	1.595 (40.51)	0.375 (9.53)
37	2.247 (57.07)	0.375 (9.53)
50	2.147 (54.53)	0.490 (12.45)

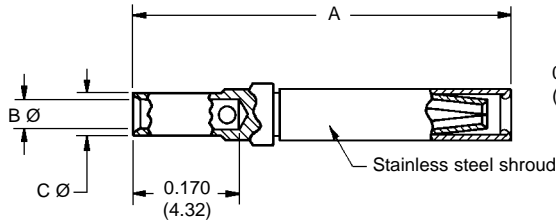
Material: Fluorosilicone and silicone blend.

Contact factory for ordering information.

DIMENSIONS ARE IN INCHES (MILLIMETERS).
ALL DIMENSIONS ARE SUBJECT TO CHANGE.

CRIMP CONTACTS CLOSED CRIMP BARREL

FEMALE CONTACT ("CLOSED ENTRY" DESIGN)

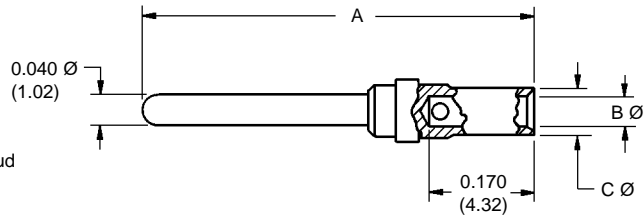


Material - Leaded nickel copper.

Plating - 0.000030 inch (0.75 μ) gold over nickel or 0.000050 inch (1.25 μ) gold over copper for military specification contacts.

PART NUMBER	WIRE SIZE AWG/(mm ²)	A	B \varnothing	C \varnothing
FC6020D-14	20 / 22 / 24 (0.5/0.3/0.25)	0.538 (13.67)	0.044 (1.12)	0.066 (1.68)
M39029/63-368	20 / 22 / 24 (0.5/0.3/0.25)	0.538 (13.67)	0.044 (1.12)	0.066 (1.68)

MALE CONTACT

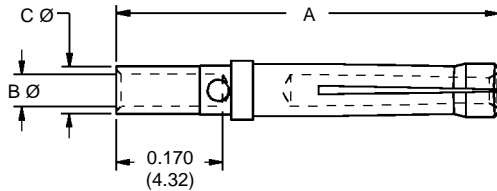


Material - Brass.

Plating - 0.000030 inch (0.75 μ) gold over nickel or 0.000050 inch (1.25 μ) gold over copper for military specification contacts.

PART NUMBER	WIRE SIZE AWG/(mm ²)	A	B \varnothing	C \varnothing
MC6020D-14	20 / 22 / 24 (0.5/0.3/0.25)	0.550 (13.97)	0.044 (1.12)	0.066 (1.68)
M39029/64-369	20 / 22 / 24 (0.5/0.3/0.25)	0.550 (13.97)	0.044 (1.12)	0.066 (1.68)

FEMALE CONTACT ("ROBI-D OPEN ENTRY" DESIGN)



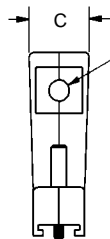
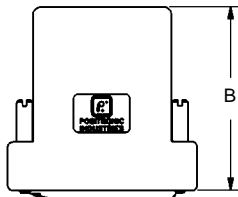
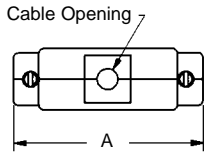
Material - Phosphor bronze.

Plating - 0.000030 inch (0.75 μ) gold over nickel.

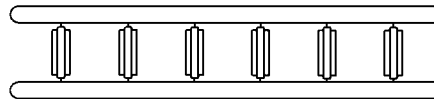
PART NUMBER	WIRE SIZE AWG/(mm ²)	A	B \varnothing	C \varnothing
FC6520D-14	20 / 22 / 24 (0.5/0.3/0.25)	0.538 (13.67)	0.044 (1.12)	0.066 (1.68)

COMPOSITE HOODS

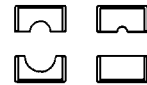
COMPOSITE HOOD WITH ROTATING MALE JACKSCREWS (Z) EMI ENVIRONMENT



Cable Opening
 (Side cable opening not available for size 50 hood)



Insert Tree Assembly

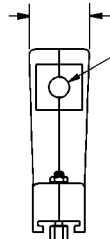
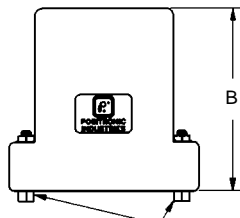
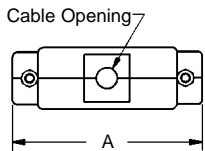


Typical inserts
 Various inserts are provided to accommodate different cable sizes

Rotating Male Jackscrews
 4-40 UNC Threads, Steel, Zinc plated or Stainless Steel, passivated

Example Part Number:
D25000Z00

COMPOSITE HOOD WITH FIXED FEMALE JACKSCREWS (Z4) EMI ENVIRONMENT



Cable Opening
 (Side cable opening not available for size 50 hood)

Fixed Female Jackscrews
 4-40 UNC Threads, Steel, Zinc plated or Stainless Steel, passivated

Example Part Number:
D25000Z400

Part Number	A	B	C	Cable Opening	
				Min	Max
D9000Z00	1.387	1.935	0.735	0.100	0.400 x 0.570
D9000Z400	(35.2)	(49.1)	(18.7)	(2.5)	(10.2) x (14.5)
D15000Z00	1.715	1.935	0.735	0.100	0.400 x 0.570
D15000Z400	(43.6)	(49.1)	(18.7)	(2.5)	(10.2) x (14.5)
D25000Z00	2.254	2.200	0.735	0.100	0.550 x 0.570
D25000Z400	(57.3)	(55.9)	(18.7)	(2.5)	(14.0) x (14.5)
D37000Z00	2.903	2.200	0.735	0.100	0.550 x 0.570
D37000Z400	(73.7)	(55.9)	(18.7)	(2.5)	(14.0) x (14.5)
D50000Z00	2.809	2.700	0.900	0.100	∅ 0.630
D50000Z400	(71.3)	(68.58)	(22.86)	(2.5)	(16.00)

Material: Composite, conductive volume resistivity (1.0 OHM - cm max)

Attenuation: 40+ decibels

DIMENSIONS ARE IN INCHES (MILLIMETERS).
 ALL DIMENSIONS ARE SUBJECT TO CHANGE.

ORDERING INFORMATION – CODE NUMBERING SYSTEM

Specify Complete Connector By Following Steps 1 Through 9
 Insert "0" When Step Is Not Used

STEP	1	2	3	4	5	6	7	8	9
	EVD	25	P	0	0	Z	0	S	

STEP 1 - Basic Series
 EVD Series

STEP 2 - EVD Connector Variants
 9, 15, 25, 37, 50

STEP 3 - Connector Gender
 P - Male contact with interfacial seal
 F - Female contact

STEP 4 - Type of Contacts
 0 - Order contacts separately.
 1 - Crimp, 20 AWG - 24 AWG (0.5 mm² - 0.25 mm²) kitted with connector.
 2 - Solder, 20 AWG - 24 AWG (0.5 mm² - 0.25 mm²) kitted with connector.

***STEP 5 - Mounting Style**
 0 - Mounting hole, 0.120 (3.05) diameter.
 F - Float mounts, Universal.
 S2 - Swaged spacer, 4-40 threads, 0.125 (3.18) length.
 S5 - Swaged locknut, 4-40 threads.

STEP 9 - Special Options
 Consult Sales Department.

STEP 8 - Shell Options
 S - Stainless steel, passivated.
 0 - Zinc plated with dichromate seal.

***STEP 7 - Locking Systems**
 0 - None, specify only with 'Z' or 'Z4' hood option of STEP 6.
 T2 - Fixed female jackscrews.
 E - Rotating male jackscrews.

***STEP 6 - Hoods**
 0 - None.
 Z - Composite hood with rotating male jackscrews.
 Z4 - Composite hood with fixed female jackscrews.

Order sealing plugs separately, part number 4737-37-0.

*For additional information on accessories listed on STEP 5, 6 and 7, see Accessories catalog.

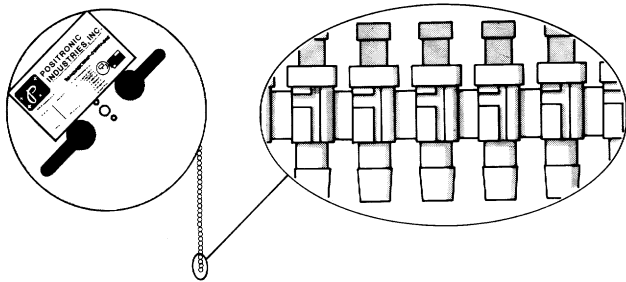
CONTACTS ORDERED SEPARATELY

Contacts may be ordered separately by specifying the appropriate catalog part number and quantity. See page 25 for part numbers.

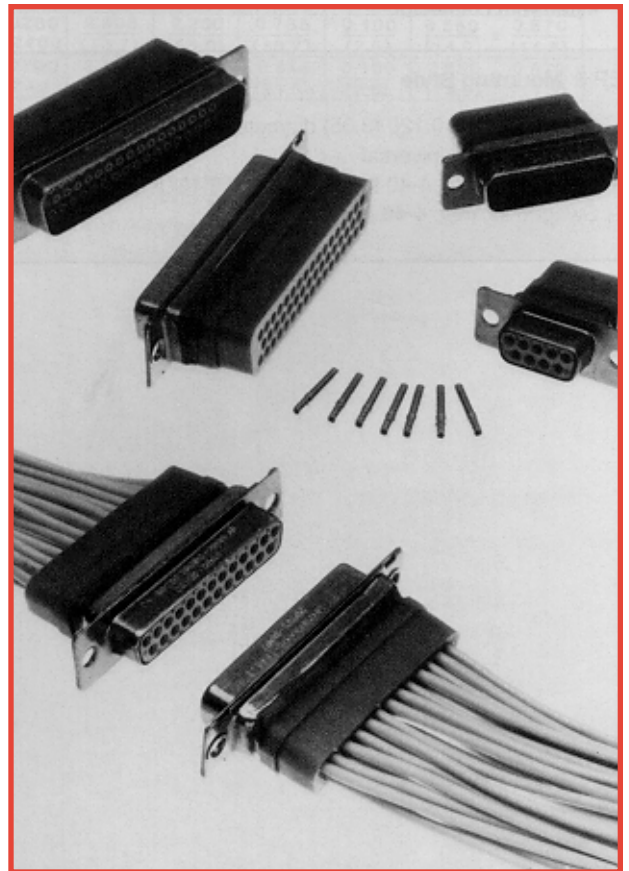
In addition, these contacts may be ordered in reels of 2,000 contacts for use with the Positronic automatic feed pneumatic crimp tool. The same carrier type is used for both male and female contacts.

To order contacts in reels, add the letter "R" after the contact part number. Example: MC6020DR-14 (male contact) and FC6020DR-14 (female contact).

The catalog part number of the Positronic automatic feed pneumatic crimp tool is 9550-1.



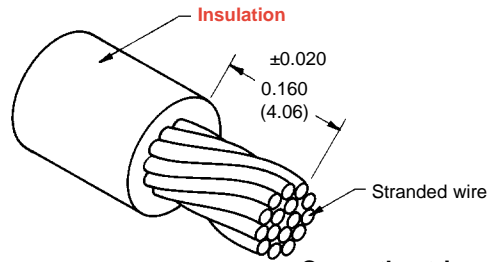
Enlarged section of plastic contact carriers



CRIMPING INFORMATION FOR EVD SERIES CRIMP CONTACTS

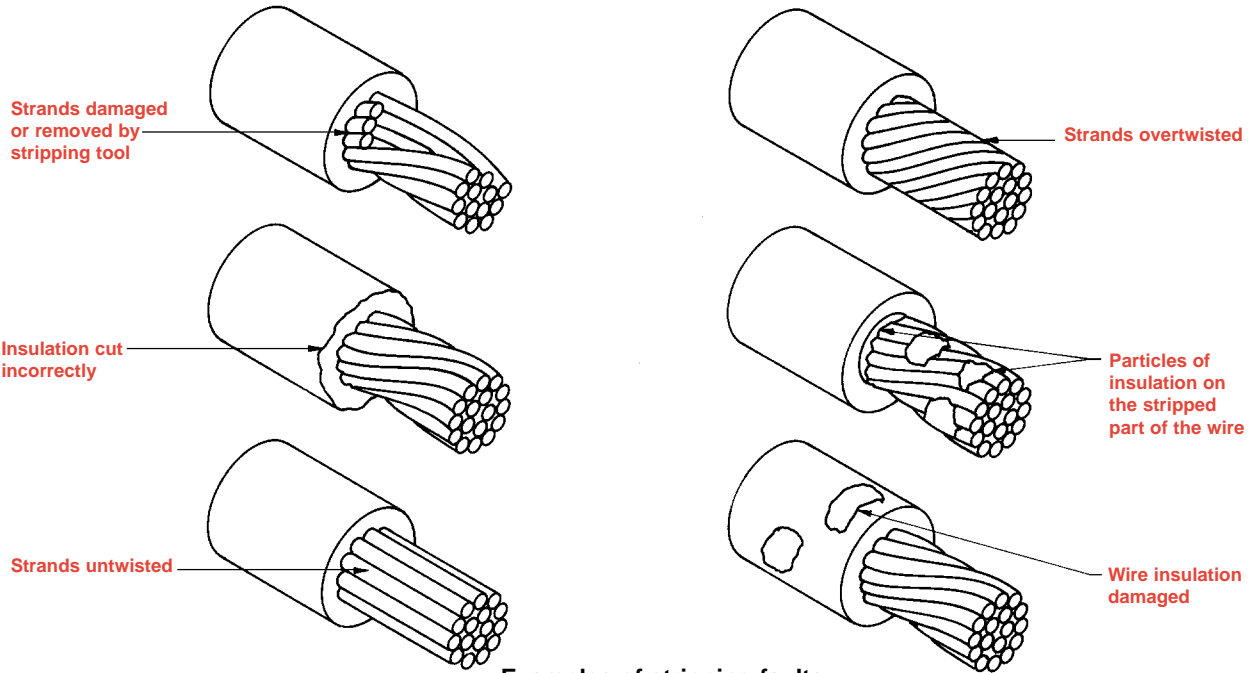
USE INDICATED POSITRONIC TOOLS FOR BEST RESULTS

Step 1: Strip wire to indicated length



Correctly stripped wire

- Take care not to:
- Damage or remove strands
 - Untwist or overtwist strands
 - Leave insulation particles on strands
 - Damage insulation



Examples of stripping faults

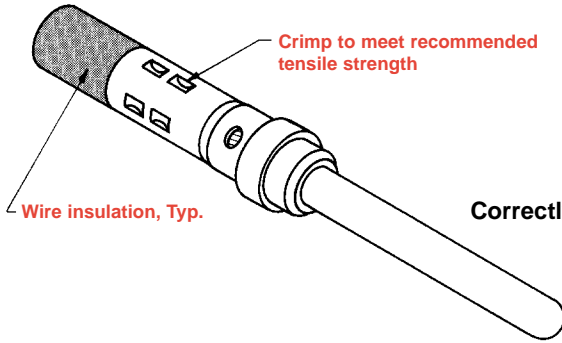
Step 2: Crimp wire to contact

- For hand crimp tool:
- Place contact into crimping tool
 - Insert wire into contact
 - Center contact by slowly closing crimping tool until crimp indenters make contact with crimp barrel
 - Complete the cycle of the crimping tool in one smooth motion
 - Remove crimped contact

- For automatic feed pneumatic crimp tool:
- Insert wire into the contact, positioned in the crimp tool by the plastic carrier
 - Depress the activating device of the crimping tool to start crimping cycle
 - Remove crimped contact

CRIMPING INFORMATION FOR EVD SERIES CRIMP CONTACTS

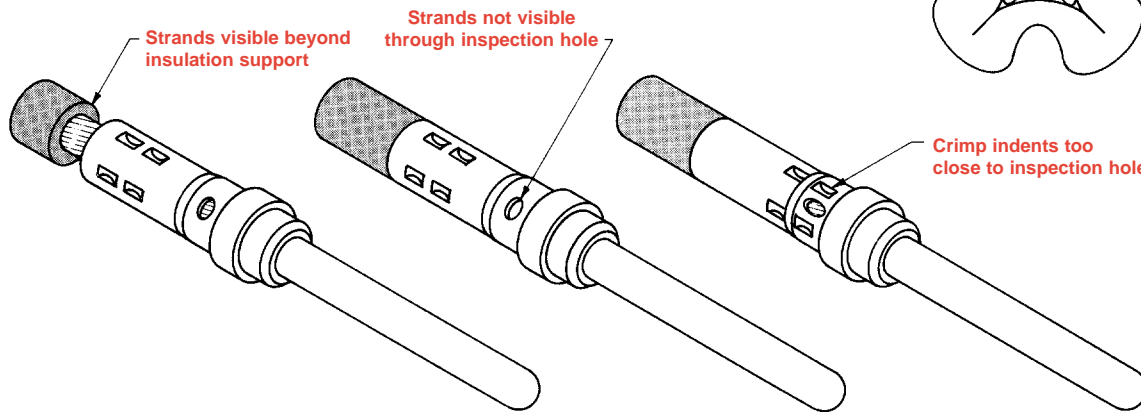
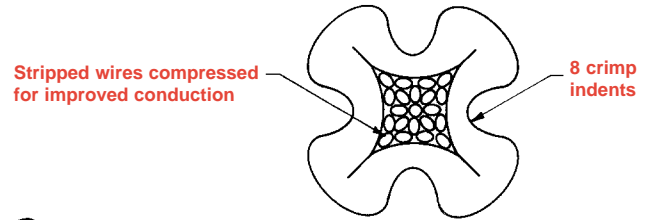
Step 3: Inspect crimp



Correctly crimped contact

- For all tools: - Strands to be visible through the inspection hole
 - Strands not to be visible beyond the insulation support
 - Crimped contact to meet recommended conductor tensile force shown in chart
 - Check for peeled gold and bent contact

Cross section of correctly crimped contact



Stripped part of the wire too long

Stripped part of the wire too short

Crimp indents incorrectly located

Examples of crimping faults

AUTOMATIC FEED, CRIMP TOOL, PNEUMATICALLY ACTUATED Part No. 9550-1

This fast cycling automatic feed strip and crimp tool produces an 8 indent crimp on wire sizes 20 AWG (0.5 mm²) through 24 AWG (0.3 mm²). EVD Series contacts must be ordered on reels.

To order, specify part number 9550-1. Foot control valve is supplied as a standard accessory.



Positronic Recommended Conductor Tensile Strength

WIRE SIZE AWG/(mm ²)	AXIAL LOAD POUNDS/(N)
<u>20</u> (0.5)	<u>20</u> (89)
<u>22</u> (0.3)	<u>12</u> (53)
<u>24</u> (0.25)	<u>8</u> (36)

Conductor tensile strength values are derived using silver-tin plated copper wires.

Values may change depending upon what type of wire is used.

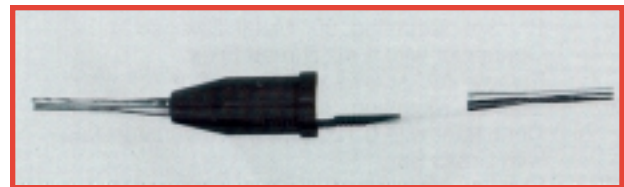
MINIATURE STEP ADJUSTABLE TOOL (M22520/2-01) Part No. 9507

This miniature 8 step adjustable hand crimping tool produces an 8 indent crimp configuration and will crimp wire sizes 20 AWG (0.5 mm²) through 24 AWG (0.3 mm²). To crimp wire size 20 AWG (0.5 mm²) through 24 AWG (0.3 mm²), order contact positioner 9502-5. Each positioner is equipped with a data plate which gives the correct crimp-depth setting for each wire size, and must be used with 9507 tool frame for best results when crimping EVD Series contacts.



INSERTION/REMOVAL TOOL (M81969/1-02)

One end of this tool is used to insert contacts into EVD Series connectors. The other end is used to extract contacts. This is accomplished by sliding the extraction tip down the wire into the connector until it bottoms against the contact. A slight rotation while pushing will release the contacts, which are then extracted by simultaneously pulling on the wire.



Positronic recommended tools for EVD series contacts.

CRIMP TOOLS	POSITIONERS FOR FC6020D-14, MC6020D-14, M39029/63-368 M39029/64-369
9507, HAND CRIMP TOOL	9502-5
9550-1, AUTOMATIC FEED, PNEUMATIC STRIP AND CRIMP TOOL	Supplied in reels

INGRESS PROTECTION SYSTEM

APPENDIX

1. Explanation of Ingress Protection (IP) System for Enclosures
2. Description of NEMA - Enclosure Types
3. Comparison Between NEMA Enclosure Type Numbers and IEC Enclosure Classification Designations







Explanation of Ingress Protection (IP) System for Enclosures

This system outlined in IEC 529 is designed to indicate the standard degrees of protection: from (a) touch and ingress of solids, and (b) from ingress of liquids, which enclosures may exhibit, and must not be confused with explosion protection techniques. These degrees of protection are, however, frequently referred to in standards and literature, and hence are listed below.

The first numeral designates the degree of protection against touching live parts and ingress of solid foreign bodies, the second designates the degree of protection against ingress of liquid.

The higher the numeral of the first and second characteristic, the greater degree of protection the enclosure offers, e.g. IP55 meets all the less onerous degrees such as IP22, IP23, IP34 and IP54. The term "weatherproof" is not included at present in the IP system but IP54 enclosures are frequently described in this way.

Protection of equipment against ingress of solid bodies and liquids

Solid foreign bodies			Liquids	
First characteristic numeral		Degree of protection	Second characteristic numeral	Degree of protection.
0		No protection of persons against contact with live or moving parts inside the enclosure. No protection of equipment against ingress of solid foreign bodies.	0	No protection.
1	>50 mm 	Protection against accidental or inadvertent contact with live or moving parts inside the enclosure by a large surface of the human body, e.g. a hand, but not protection against deliberate access to such parts. Protection against ingress of large solid foreign bodies.	1	Protection against drops of condensed water. Drops of condensed water falling on the enclosure shall have no harmful effect.
2	>12.5 mm 	Protection against contact with live or moving parts inside the enclosure by fingers. Protection against ingress of medium size solid foreign bodies.	2	Protection against drops of liquid. Drops of falling liquid shall have no harmful effect when the enclosure is tilted at any angle up to 15° from the vertical.
3	>2.5 mm 	Protection against contact with live or moving parts inside the enclosure by tools, wires or such objects of thickness greater than 2.5 mm. Protection against ingress of small solid foreign bodies.	3	Protection against rain. Water falling in rain at an angle equal to or smaller than 60° with respect to the vertical shall have no harmful effect.
4	>1.0 mm 	Protection against contact with live or moving parts, inside the enclosure by tools, wires or such objects of thickness greater than 1 mm. Protection against ingress of small solid foreign bodies.	4	Protection against splashing. Liquid splashed from any direction shall have no harmful effect.
5		Complete protection against contact with live or moving parts inside the enclosure. Protection against harmful deposits of dust. The ingress of dust is not totally prevented, but dust cannot enter in an amount sufficient to interfere with satisfactory operation of the equipment enclosed.	5	Protection against water jets. Water projected by a nozzle from any direction under stated conditions shall have no harmful effect.
6		Complete protection against contact with live or moving parts inside the enclosure. Protection against ingress of dust.	6	Protection against conditions on ships' decks (deck watertight equipment). Water from heavy seas shall not enter the enclosures under prescribed conditions.
			7	Protection against immersion in water. It shall not be possible for water to enter the enclosure under stated conditions of pressure and time.
			8	Protection against indefinite immersion in water under specified pressure. It shall not be possible for water to enter the enclosure.

	Description of NEMA – Enclosure Types
Type	Intended use and description
1	Indoor use primarily to provide a degree of protection against limited amounts of falling dirt.
2	Indoor use primarily to provide a degree of protection against limited amounts of falling water and dirt.
3	Outdoor use primarily to provide a degree of protection against rain, sleet, wind-blown dust and damage from external ice formation.
3R	Outdoor use primarily to provide a degree of protection against rain, sleet and damage from external ice formation.
3S	Outdoor use primarily to provide a degree of protection against rain, sleet, wind-blown dust and to provide for operation of external mechanisms when ice laden.
4	Indoor or outdoor use primarily to provide a degree of protection against wind-blown dust and rain, splashing water, hose-directed water and damage from external ice formation.
4X	Indoor or outdoor use primarily to provide a degree of protection against corrosion, windblown dust and rain, splashing water, hose-directed water and damage from external ice formation.
5	Indoor use primarily to provide a degree of protection against settling airborne dust, falling dirt and dripping noncorrosive liquids.
6	Indoor or outdoor use primarily to provide a degree of protection against hose-directed water and the entry of water during occasional temporary submersion at a limited depth and damage from external ice formation.
6P	Indoor or outdoor use primarily to provide a degree of protection against hose-directed water, the entry of water during prolonged submersion at a limited depth and damage from external ice formation.
12, 12K	Indoor use primarily to provide a degree of protection against circulating dust, falling dust, falling dirt and dripping noncorrosive liquids.
13	Indoor use primarily to provide a degree of protection against dust, spraying of water, oil and noncorrosive coolant.

“This material is reproduced from NEMA Standards Publication 250-1991 by permission of the National Electrical Manufacturers Association which holds the copyright.”

COMPARISON BETWEEN NEMA ENCLOSURE TYPE NUMBERS AND IEC ENCLOSURE CLASSIFICATION DESIGNATIONS

IEC Publication 529, Classification of Degrees of Protection Provided by Enclosures, provides a system for specifying the enclosures of electrical equipment on the basis of the degree of protection provided by the enclosure. IEC 529 does not specify degrees of protection against mechanical damage of equipment, risk of explosions or conditions such as moisture (produced for example by condensation), corrosive vapors, fungus or vermin. NEMA Standards Publication 250 does test for environmental conditions such as corrosion, rust, icing, oil and coolants. For this reason, and because the tests and evaluations for other characteristics are not identical, the IEC Enclosure Classification Designations cannot be exactly equated with NEMA Enclosure Type Numbers.

The IEC designation consists of the letters IP followed by two numerals. The first characteristic numeral indicates the degree of protection provided by the first enclosure with respect to persons and solid foreign objects entering the enclosure. The second characteristic numeral indicates the degree of protection provided by the enclosure with respect to the harmful ingress of water.

The Table provides an approximate equivalent conversion from NEMA Enclosure Type Numbers to IEC Enclosure Classification Designations. The NEMA Types meet or exceed the test requirements for the associated IEC Classifications; for this reason the Table cannot be used to convert exactly from IEC Classifications to NEMA Types.

Comparison of NEMA Type Numbers to IEC Classification Designations (Cannot be used to convert IEC Classification Designations to NEMA Type Numbers)

NEMA Enclosure Type Number	IEC Enclosure Classification Designation
1	IP10
2	IP11
3	IP54
3R	IP14
3S	IP54
4 and 4X	IP56
5	IP52
6 and 6P	IP67
12 and 12K	IP52
13	IP54

“This material is reproduced from NEMA Standards Publication 250-1991 by permission of the National Electrical Manufacturers Association which holds the copyright.”

NOTE: This comparison is based on tests specified in IEC Publication 529.

POSITRONIC PRODUCTS

Contact Sizes: 0, 8, 12, 16, 20 and 22
Current Ratings: To 150 amperes
Terminations: Crimp, wire solder, straight solder, right angle solder, straight press-fit and right angle press-fit
Configurations: Multiple variants in a variety of package sizes
Compliance: PICMG 2.11, PICMG 3.0, VITA 41



FEATURES: Hot swap capability • AC/DC operation in a single connector • Signal contacts for hardware management • Blind mating • Sequential mating • Large Surface Area Contact Mating System • Wide variety of accessories • Customer specified contact arrangements

Contact Sizes: 8, 20 and 22
Current Ratings: To 40 amperes nominal
Terminations: Crimp, wire solder, straight solder, right angle solder and straight press-fit
Configurations: Multiple variants in both standard and high densities
Qualifications: MIL-DTL-24308, Goddard Space Flight 311P, MIL-C-39029, IP65, IP67



FEATURES: Three performance levels available: professional quality, military quality and space-flight quality provide multiple performance to cost choices • Options include thermocouple contacts, filtered, environmentally sealed and dual port package including mixed density • Broad selection of accessories

Contact Sizes: 16, 20 and 22
Current Ratings: To 13 amperes
Terminations: Crimp, wire solder, straight solder and right angle solder
Configurations: Multiple variants in both standard and high densities
Qualifications: MIL-DTL-28748, MIL-C-39029, CCITT V.35



FEATURES: Two performance levels available: industrial quality and military quality provide two performance to cost choices • Large Surface Area Contact Mating System • A wide variety of accessories • Broad selection of contact variants and package sizes

Contact Sizes: 12, 16, 20 and 22
Current Ratings: To 25 amperes nominal
Terminations: Crimp, wire solder, straight solder and right angle solder
Configurations: Multiple variants in two package sizes
Qualifications: Environmental protection to IP67



FEATURES: Non-corrodible / lightweight composite construction • EMI/RFI shielded versions • Thermocouple contacts • Environmentally sealed versions • Rear insertion/ front release of removable contacts • Two level sequential mating • Overmolding available on full assemblies

All Positronic connector products can be supplied as part of cable assemblies whose technical characteristics would reflect those of the connectors being used within the assembly.



FEATURES: Shorten the supply chain and reduce additional costs and delays by "cablizing" • Overmolding available • Shielded and environmentally sealed versions available • Power cables and access boxes which meet the SAE J2496 specification

Contact Sizes: 8, 12, 16, 20 and 22
Current Ratings: To 40 amperes nominal
Terminations: Feed through is standard; flying leads and board mount available upon request
Configurations: See D-Subminiature and Circular Configurations above
Qualifications: Space-D32



FEATURES: Intended for use as an electrical feedthrough in high vacuum applications • Leakage rate: 1×10^{-9} mbar.l/s • Signal, power, coax and high voltage versions available • Connectors can be mounted on flange assembly per customer specification

For more information, visit www.connectpositronic.com or call your nearest Positronic sales office as given on the back of this catalog.

NORTH AMERICAN HEADQUARTERS

UNITED STATES, Springfield, Missouri

Factory Sales and Engineering Offices (800)641-4054

PUERTO RICO, Ponce Factory

Factory Sales and Engineering Offices (787)841-0920

MEXICO

Factory Sales and Engineering Offices (800)872-7674

CANADA

Factory Sales and Engineering Offices (800)327-8272

PACIFIC BASIN HEADQUARTERS

SINGAPORE, Asian Factory

Factory Sales and Engineering Offices 65-6842-1419

Malaysia Sales Office 65-6842-1419

Taiwan Sales Office 8862-2937-8775

China (Shanghai) Sales Office 8621-6308-3640

Japan Sales Office 8135-661-3047

*Additional Technical Agents in Australia, New Zealand, India
South Korea, Thailand, Philippines, Hong Kong and Indonesia.

EUROPEAN HEADQUARTERS

FRANCE, Auch Factory

Factory Sales and Engineering Offices 33 5 62 63 44 91

EUROPE, Direct Sales Offices

Northern France Sales Office 33 1 45 88 13 88

Southern France Sales Office 33 4 67 72 80 28

Italy Sales Office 39 2 54 116 106

Germany Sales Office 49 2351 63 47 39

EUROPE, Technical Agents

Technical Agents in Austria, Benelux, Denmark, Finland, Greece,
Ireland, Scotland, Slovenia, Spain, Sweden, Switzerland and the
United Kingdom

MIDEAST, Technical Agents

Technical Agents in Israel and Turkey

POSITRONIC INDUSTRIES, INC.

423 N Campbell Ave • PO Box 8247 • Springfield, MO 65801
Tel (417) 866-2322 • Fax (417) 866-4115 • Toll Free (800) 641-4054
info@connectpositronic.com

POSITRONIC INDUSTRIES, S.A.S.

Zone Industrielle d'Engachies • 46 Route d'Engachies • F-32020
Auch Cedex 9 • France
Telephone 05 62 63 44 91 • Telecopieur 05 62 63 51 17
contact@connectpositronic.com

POSITRONIC ASIA PTE LTD.

3014A Ubi Road 1 #06-07 • Singapore 408703
Telephone (65) 6842-1419 • Fax (65) 6842-1421
singapore@connectpositronic.com



**WIN-D
Win-DD
Series**

**ENVIRONMENTAL
D-SUBMINIATURE, IMPROVED
UNIBODY DESIGN**

**WIN-D
Win-DD
Series**



**** One piece unibody housing eliminates need for sealants ****

**** Standard and high density options ****

**** Improved temperature range ****

**** Increased performance ****

**** Higher reliability ****

**** Lower cost ****

WIN-D and WIN-DD series D-subminiature connectors have been a popular choice in applications with environmental considerations. WIN-D and WIN-DD environmental D-subminiature connectors achieve water and dust ingress protection to IP67.

Positronic now offers a new "unibody" design. The unibody design eliminates the need to add sealants as a secondary operation. This allows more rapid manufacturing of the connector, which reduces cost. In addition, concern over differences in coefficients of expansion of dissimilar materials is minimized. This allows for improved performance and a wider operating temperature range.

For extremely harsh environments, or where "**Corrosion Resistance**" is required, the contacts are supplied with extra gold plating thickness, and the

connector shells and jackscrews are supplied in stainless steel. For applications where "**Corrosion Protection**" is adequate, contact surfaces are plated with gold flash over nickel. Shells and accessories are zinc plated with dichromate seal.

The unibody design is offered in 9 contact position male and female variants, 25 contact female variant, and a 26 position female high density variant. A variety of solder terminated contacts and "cul-de-sac" accessories are available to meet specific application requirements. WIN-D and WIN-DD Series connectors conform to IEC 807-2 Performance Level 2 mechanical and dimensional requirements and conform to EIA RS232 and RS449 and CCITT X.24 interface standards.



Positronic Industries

Springfield, Missouri USA • 800.641.4054 • info@connectpositronic.com

www.connectpositronic.com

Catalog C-006-1 Rev. nc

ENVIRONMENTAL CHARACTERISTICS:

WIN-D and WIN-DD series connectors mounted on IEC 529 or NEMA 250-1991 enclosures for electrical equipment.

WIN-D and WIN-DD Connector Panel mount sealing plates, when mounted on the walls of enclosures, maintain the dust and water ingress protection rating of IEC 529 or NEMA 250 enclosure on which they are mounted.

WIN-D and WIN-DD connector enclosure assemblies provide dust and water ingress protection to IP67, which allows temporary immersion in water to a depth of 1.0 meter for 30 minutes without ingress of water or dust to the enclosure.

ENVIRONMENTAL TEST SPECIFICATIONS

Applicable IEC Moisture Tests

IP65 IEC 529 Test 14.2.5 – Spray nozzle 6.3 mm diameter, delivery rate 12.5 liters per minute, 1 minute duration of connector exposure to spray. When conducting this test on Portable Enclosure Connectors, the protective cover must be securely fastened over the face of the connector.

Requirements

No water to have penetrated enclosure through connector.

Applicable IEC Moisture Tests

IP67 IEC 529 Test 14.2.7 – Temporary immersion, 1.0 meter for 30 minutes.

Requirements

No water to have penetrated enclosure through connector.

Applicable IEC Connector Tests After Moisture Exposure Tests Have Been Performed

IEC 512-2, Test 3a – Insulation Resistance

IEC 512-2, Test 4a – Voltage proof

Limited water immersion testing was performed on virgin connectors before leaving our factory. We recommend that our environmental connectors be retested by our customers after a suitable period of time/temperature conditioning has taken place to determine the suitability of the connector for the application. We cannot predict service life of our connectors for all applications.

Requirements

Portable enclosure. 1 G ohm minimum insulation resistance after connector face and contacts are dried. Voltage proof 1,000 V rms.

Products described within this catalog may be protected by one or more of the following US. patents:

#4,721,472 #4,900,261 #5,255,580
#5,329,697 #6,260,268

Patented in Canada, 1992

Unless otherwise specified, dimensional tolerances are:

- 1) ± 0.001 inches [0.03 mm] for male contact mating diameters.
- 2) ± 0.003 inches [0.08 mm] for contact termination diameters.
- 3) ± 0.005 inches [0.13 mm] for all other diameters.
- 4) ± 0.015 inches [0.38 mm] for all other dimensions.

Positronic Industries believes the data contained herein to be reliable. Since the technical information is given free of charge, the User employs such information at his own discretion and risk. Positronic Industries assumes no responsibility for results obtained or damages incurred from use of such information in whole or in part.

Positronic Industries' FEDERAL SUPPLY CODE (Cage Code) FOR MANUFACTURERS is 28198

MATERIALS AND FINISHES:

Insulator:	Nylon resin, UL 94V-0 black color.
Contacts:	Male contacts – precision machined brass alloy or phosphor bronze. Female contacts – precision machined high tensile phosphor bronze.
Contact Plating:	“ Corrosion Protection ”: gold flash over nickel plate. “ Corrosion Resistant ”: gold plate 0.000030 inch (0.8 micron) over nickel plate.
Shells and Jackscrew Systems and Cul-de-Sac Mounting Accessories:	“ Corrosion Protection ”: steel, zinc plated with dichromate seal. “ Corrosion Resistant ”: stainless steel passivated.
Push-on Fasteners:	Phosphor bronze with tin plate.
Angle Brackets:	Brass, zinc plate with dichromate seal.
Interfacial Seal:	Elastomer or TPE.
Panel Mount Sealing Plate Assembly:	Glass filled thermoplastic with elastomer O-ring.
Protective cover over connector shell:	Conductive polyethylene or conductive polyester.

ELECTRICAL CHARACTERISTICS:

Contact Current Rating:	7.5 amperes nominal, size 20 contacts 5 amperes nominal, size 22 contacts
Initial Contact Resistance:	0.010 ohms maximum.
Insulator Resistance:	5 G ohms.
Clearance and Creepage Distance Minimum:	0.039 inch (1mm).
Proof Voltage:	1000 V r.m.s.
Working Voltage:	300 V r.m.s.

MECHANICAL CHARACTERISTICS:

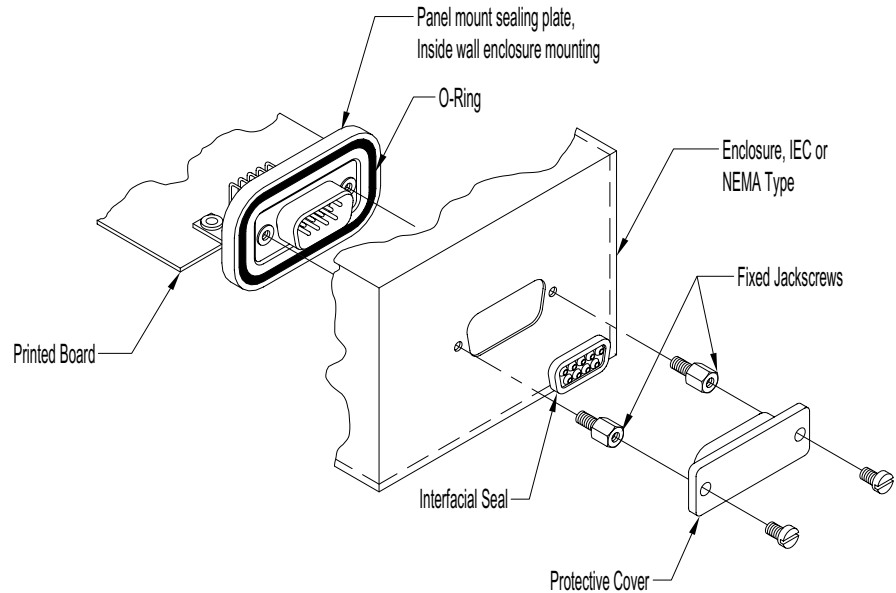
Fixed Contacts:	WIN-D Size 20 contact, male contact – 0.040 inch (1.02 mm) diameter. Female contact – rugged open entry design. WIN-DD Size 22 contact, male contact – 0.030 inch (0.76 mm) diameter. Female contact – rugged open entry design.
Contact Retention in Insulator:	6 lbs. (27N)
Resistance to Solder Iron Heat:	500°F (260°C) for 10 seconds duration per IEC 512-6.
Contact Terminations:	WIN-D Solder cup contacts – 0.042 inch (1.06 mm) minimum hole diameter for 20 AWG (0.5 mm ²) wire maximum. Straight printed board mount – 0.028 inch (0.71 mm) diameter. 90° printed board mount – 0.028 inch (0.71 mm) diameter for all printed board contact footprints. WIN-D Solder cup contacts – 0.035 inch (0.89 mm) minimum hole diameter for 22 AWG (0.3 mm ²) wire maximum. Straight printed board mount – 0.020 inch (0.5 mm) diameter. 90° printed board mount contact terminations 0.030 inch (0.76 mm) diameter.
Polarization:	Trapezoidally shaped shells.
Enclosure Mounting Accessories:	Cul-de-sac blind hole fasteners, angle brackets and push-on fasteners.
Inside Wall Enclosure Mount:	Minimum thickness 0.040 inch (1.02 mm). Maximum thickness 0.080 inch (2.03 mm).
Locking Systems:	Jackscrews.
Mechanical Operations:	500 operations minimum per IEC 512-5.
Required Sealing Plate Mounting Torque:	1.75 in-lb. (0.20 Nm) minimum. 8.00 in-lb. (0.90 Nm) maximum.

CLIMATIC CHARACTERISTICS:

Temperature Range:	-40°C to +125°C
---------------------------	-----------------

FIXED ENCLOSURE MOUNTED CONNECTOR

The connector is mounted on the portable enclosure. Interfacial seal supplied if a male connector. The mating connector is in a remote location and is non-environmental.



The system consists of an input/output connector mechanically mounted and sealed to a portable enclosure containing electrical equipment. 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, intermittent rain, or limited water immersion during its

outdoor use. When **“Corrosion Resistance”** is a requirement, the connector should be equipped with stainless steel shells and jackscrews, and contacts plated 0.000030 inch (0.8 microns) gold over nickel.

The portable enclosure will be connected (down loaded) periodically to a non-environmental performance connector positioned in a dry and controlled atmosphere environment.

CONNECTOR-ENCLOSURE UNIT ENVIRONMENTAL RATINGS

IEC 529 Classification Designations Rated to IP67 Degree of Protection

IP67, **“Corrosion Protected”**

Dust tight and limited effects of water immersion, 1.0 meter for 30 minutes. Corrosion protected with zinc plated dichromate sealed shells and jackscrews. Contacts plated gold flash over nickel.

IP67, **“Corrosion Resistance”**

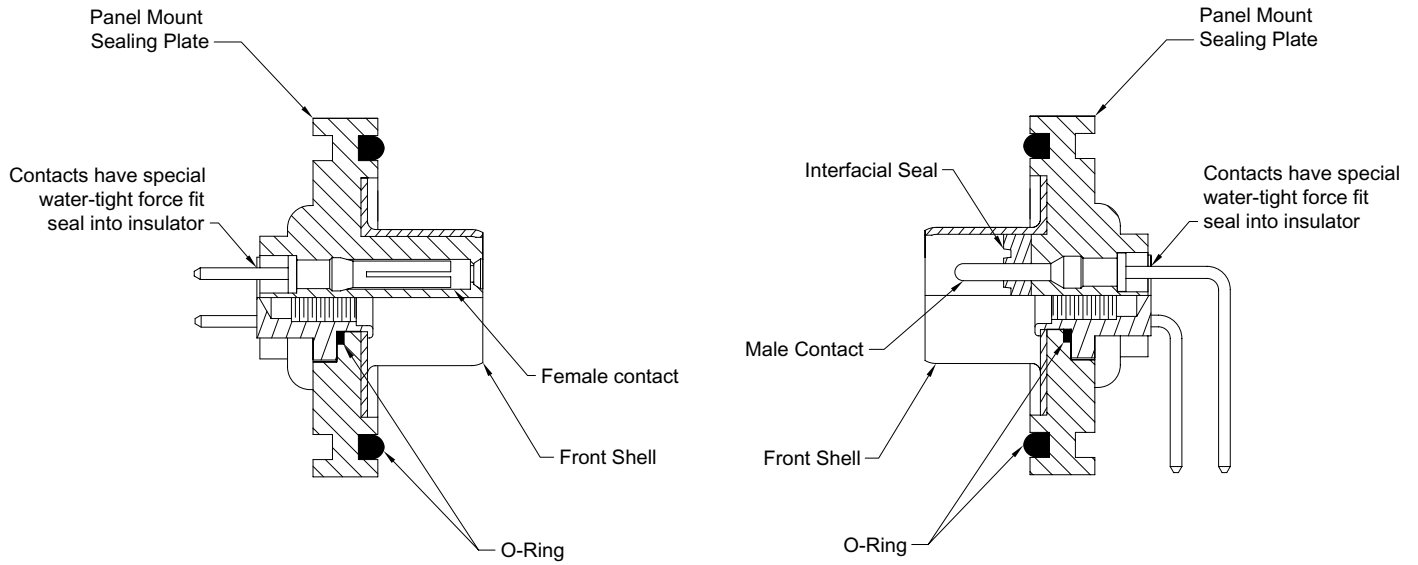
Dust tight and limited effects of water immersion 1.0 meter for 30 minutes. Corrosion resistant with stainless steel shells and jackscrews. Contacts plated 0.000030 inch (0.8 microns) gold over nickel.

NEMA Enclosure Types Approximate Equivalents of IP67 Degree of Protection

NEMA Types 3, 3R, 4 and 6

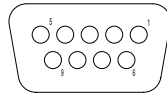
NEMA Type 4X

ENCLOSURE MOUNTED CONNECTORS



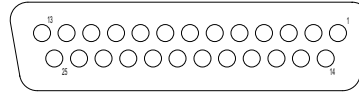
CONTACT VARIANTS

FACE VIEW OF FEMALE CONNECTOR



WD9

Available with male or female contacts

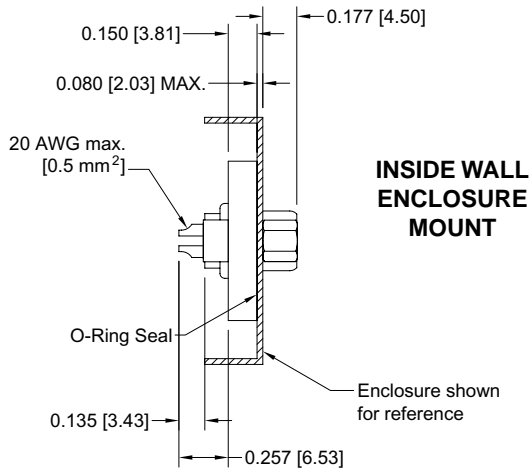


WD25

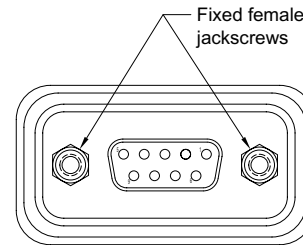
Available with female contacts

Positronic is ready to support requirements for other D-subminiature connector variants. Consult Technical Sales.

**SOLDER CUP CONNECTOR
WITH ENCLOSURE WALL MOUNT SEALING PLATE
ORDERING CODE 2**

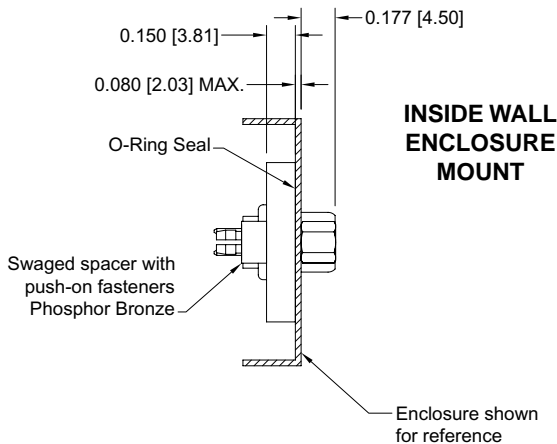


**INSIDE WALL
ENCLOSURE
MOUNT**

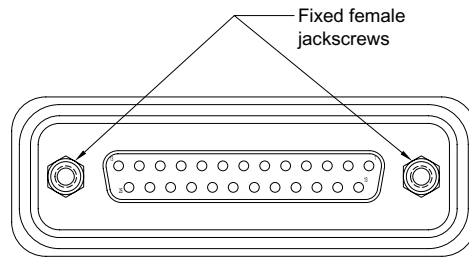


**Example Part Number:
WD9F2C5AT7U**

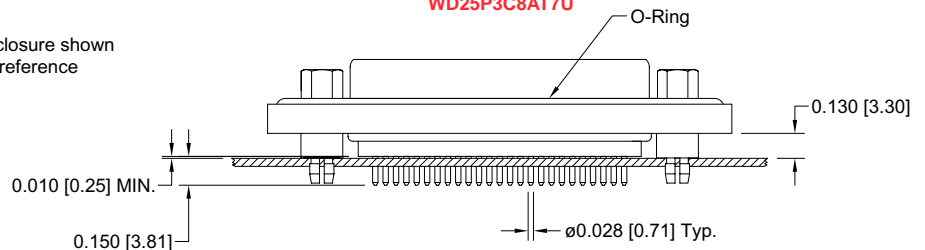
**STRAIGHT PRINTED BOARD
MOUNT CONNECTOR
WITH ENCLOSURE WALL MOUNT SEALING PLATE
ORDERING CODE 3, 0.150 (3.81) CONTACT EXTENSION**



**INSIDE WALL
ENCLOSURE
MOUNT**



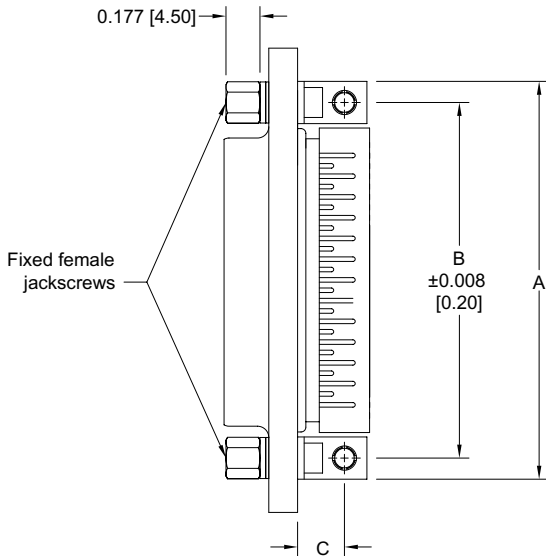
**Example Part Number:
WD25P3C8AT7U**



**DIMENSIONS ARE IN INCHES (MILLIMETERS).
ALL DIMENSIONS ARE SUBJECT TO CHANGE.**

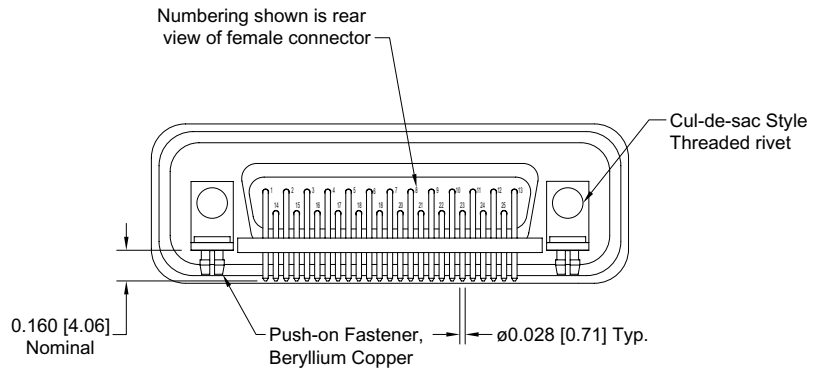
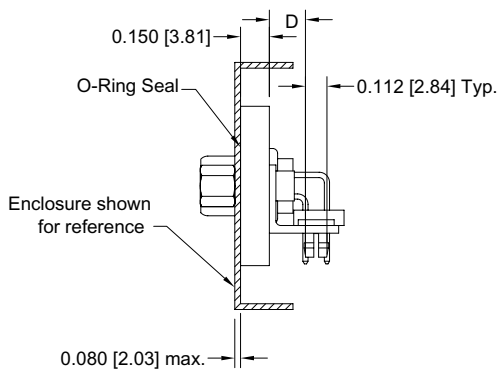
**90° PRINTED BOARD MOUNT CONNECTOR
WITH ENCLOSURE MOUNT SEALING PLATE
ORDERING CODE 5, 0.188 (4.78) CONTACT EXTENSION**

**INSIDE WALL
ENCLOSURE
MOUNT**



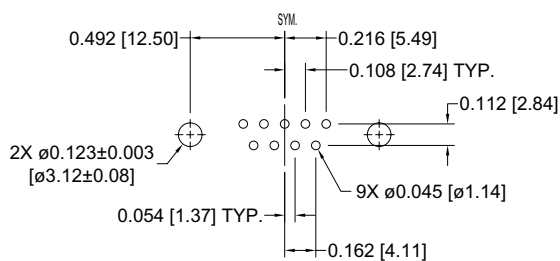
WD005C700U 0.188 (4.78) CONTACT EXTENSION				
PART NUMBER	A	B	C	D
WD905C700U	1.204 (30.58)	0.984 (24.99)	0.244 (6.20)	0.188 (4.78)
WD2505C700U	2.072 (52.63)	1.852 (47.04)	0.244 (6.20)	0.188 (4.78)

**Example Part Number:
WD25P5C7AT7U**

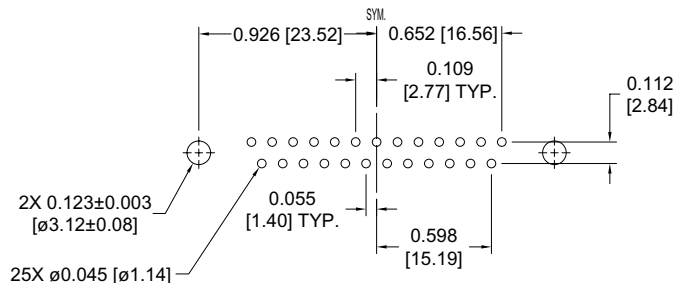


**90° AND STRAIGHT PRINTED BOARD
CONTACT HOLE PATTERN**

Hole identification shown for male connector, use mirror image for female connector.
Mount connector with mating face positioned to follow direction of arrows.



WD9



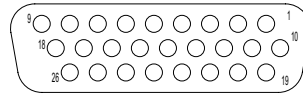
WD25

Suggest 0.045 (1.14) Ø hole for contact termination positions
Suggest 0.123 ±0.003 (3.12 ±0.08) Ø hole for mounting connector with push-on fasteners

**DIMENSIONS ARE IN INCHES (MILLIMETERS).
ALL DIMENSIONS ARE SUBJECT TO CHANGE.**

CONTACT VARIANTS

FACE VIEW OF FEMALE CONNECTOR



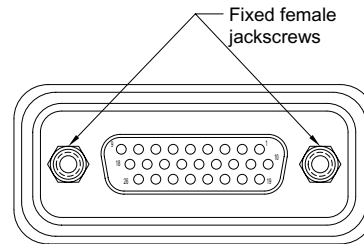
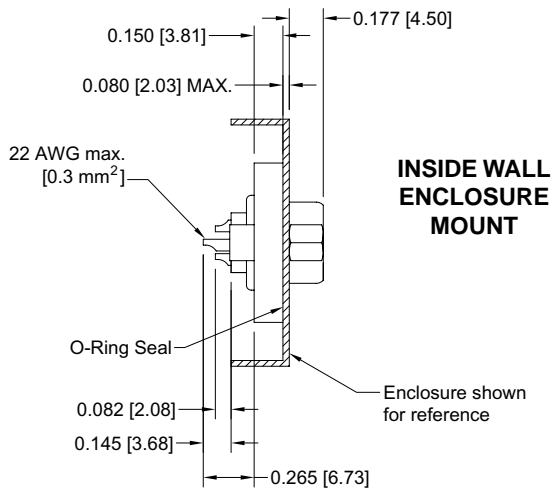
Available with female contacts

WDD26F

Positronic is ready to support requirements for other D-subminiature connector variants. Consult Technical Sales.

SOLDER CUP CONNECTOR

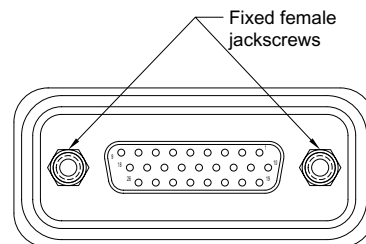
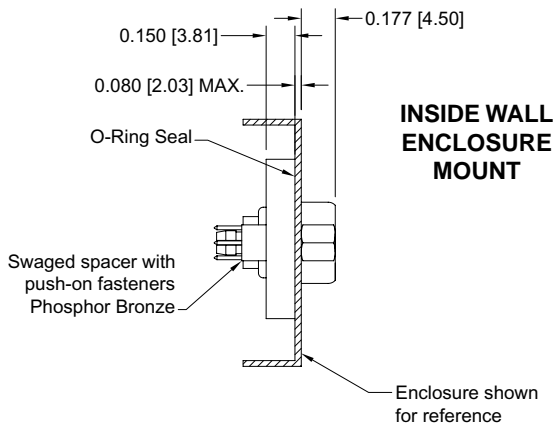
**WITH ENCLOSURE WALL MOUNT SEALING PLATE
ORDERING CODE 2**



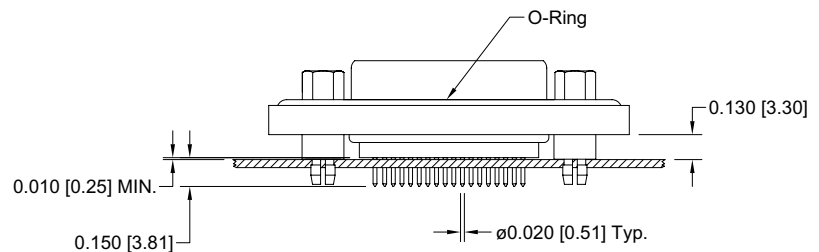
Example Part Number:
WDD26F2C5AT7U

STRAIGHT PRINTED BOARD MOUNT CONNECTOR

**WITH ENCLOSURE WALL MOUNT SEALING PLATE
ORDERING CODE 3, 0.150 (3.81) CONTACT EXTENSION**



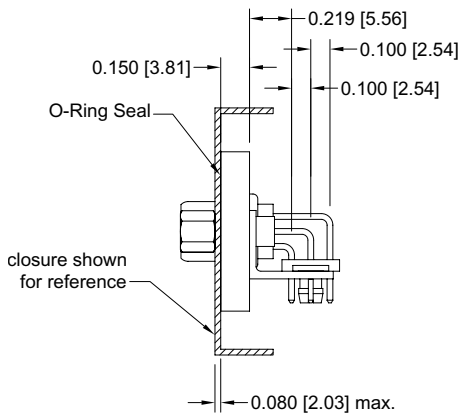
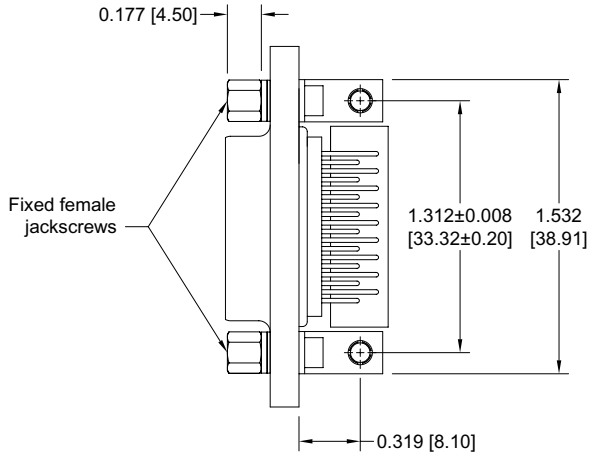
Example Part Number:
WDD26F3C8AT7U



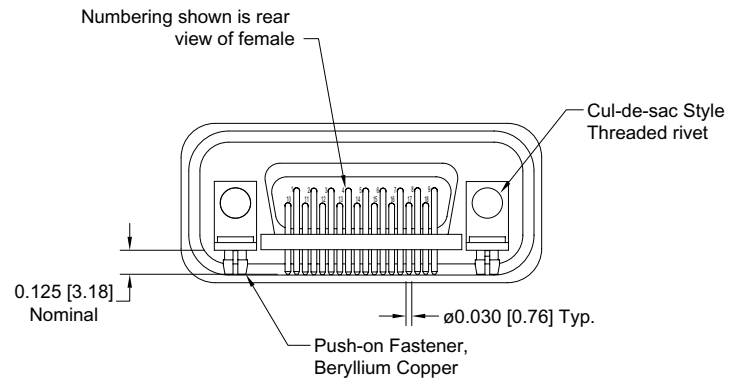
DIMENSIONS ARE IN INCHES (MILLIMETERS).
ALL DIMENSIONS ARE SUBJECT TO CHANGE.

**90° PRINTED BOARD MOUNT CONNECTOR
WITH ENCLOSURE MOUNT SEALING PLATE
ORDERING CODE 4, 0.219 (5.56) CONTACT EXTENSION**

**INSIDE WALL
ENCLOSURE MOUNT**

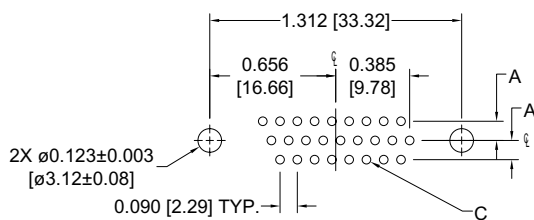


**Example Part Number:
WDD26F4C7AT7U**



**90° AND STRAIGHT PRINTED BOARD
CONTACT HOLE PATTERN**

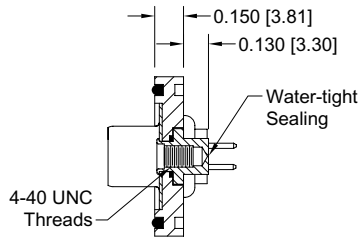
Mount connector with mating face positioned to follow direction of arrows.



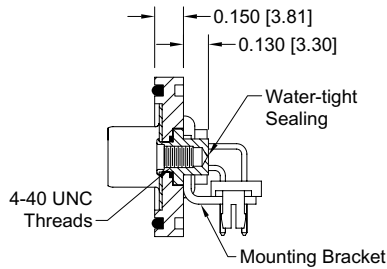
CODE NUMBER	A	C
4	0.100 (2.54)	0.045 (1.14)
3	0.078 (1.98)	0.035 (0.89)

CUL-DE-SAC STYLE MOUNTING ACCESSORIES

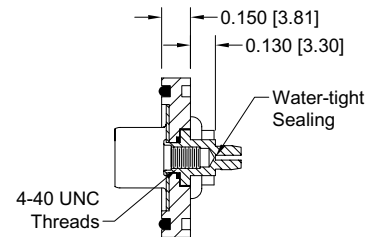
INSIDE WALL ENCLOSURE MOUNT



C5
STEEL, ZINC PLATE
WITH DICHROMATE SEAL OR
STAINLESS STEEL, PASSIVATED



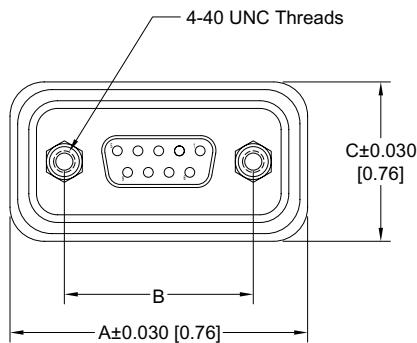
C7
STEEL, ZINC PLATE
WITH DICHROMATE SEAL, OR
STAINLESS STEEL, PASSIVATED



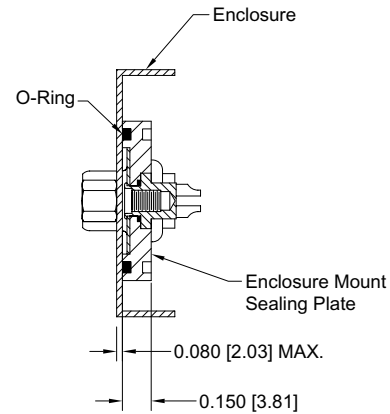
C8
PHOSPHOR BRONZE,
TIN PLATE

CONNECTOR TO ENCLOSURE WALL MOUNT SEALING PLATE

INSIDE WALL ENCLOSURE MOUNT



CONNECTOR VARIANT	A	B	C
WD9	1.550 (39.37)	0.984 (24.99)	0.830 (21.08)
WDD26	1.878 (47.70)	1.312 (33.32)	0.830 (21.08)
WD25	2.418 (61.42)	1.852 (47.04)	0.830 (21.08)



SEALING PLATE MATERIAL: GLASS FILLED THERMOPLASTIC

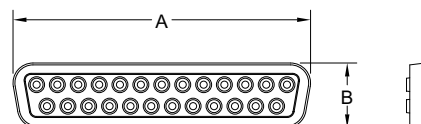
SEALING PLATE IS MOUNTED TO ENCLOSURE WALL WITH JACKSCREWS TORQUED TO A VALUE OF 1.75 in-lb (0.20 Nm) MINIMUM, 8.00 in-lb (0.90 Nm) MAXIMUM

INTERFACIAL SEAL

FURNISHED ON ALL MALE CONNECTORS

CONNECTOR VARIANT	A	B
9	0.670 (17.02)	0.340 (8.64)

MATERIAL: ELASTOMER OR TPE



ORDERING INFORMATION – CODE NUMBERING SYSTEM

For Systems 1 & 2 Enclosure Mounted Connectors

WD and WDD Series

STEP	1	2	3	4	5	6	7	8	9
Example Part Number	WD	9	P	2	C5	A	T7	SU	
Example Part Number	WDD	26	F	2	C5	A	T7	SU	
STEP 1 - Basic Series WD and WDD Series								STEP 9 - Special Options Consult Sales Department.	
STEP 2 - Connector Variants WD Series Connector Variants 9 - Male and Female* 25 - Female only* WDD Series Connector Variants 26 - Female only*								STEP 8 - Shell And Accessory Options U - Corrosion Protected Unibody Design Steel shells and jackscrews zinc plated with dichromate seal. Contacts gold flash over nickel plate. SU- Corrosion Resistant Unibody Design Stainless steel shells and jackscrews Contacts 0.000030 inch (0.8μ) gold plated over nickel.	
STEP 3 - Connector Gender P – Male contact with interfacial seal F – Female contact								STEP 7 - Female Fixed Jackscrews T7 - Mandatory for C5, C7 and C8 cul-de-sac mounting accessories.	
STEP 4 - Type of Contacts 2 - Solder cup, use for both WD and WDD series. 3 - Solder, straight printed board mount with 0.150 (3.81) tail length. Use for both WD and WDD series. 4 - Solder 90° printed board mount, for use with WDD series only, contact extension 0.219 (5.56). 5 - Solder 90° printed board mount, for use with WD series only, contact extension 0.188 (4.78).								STEP 6 - Enclosure Wall Mount Sealing Plate A - Inside wall enclosure mounted connector.	
STEP 5 - CUL-DE-SAC Style Mounting Accessories C5 - Inside wall mounting for Code 2 and 3 type contacts only. C7 - Inside wall mounting for Code 4 and 5, 90° type contact printed board mount only. Consists of an assembly of angle bracket, alignment bar and push-on fastener. C8 - Inside wall mounting for Code 3 type contacts only. Includes push-on fastener.									

* Positronic is ready to support requirements for other D-subminiature connector variants. Consult Technical Sales.

POSITRONIC PRODUCTS

Contact Sizes: 0, 8, 12, 16, 20 and 22
Current Ratings: To 150 amperes
Terminations: Crimp, wire solder, straight solder, right angle solder, straight press-fit and right angle press-fit
Configurations: Multiple variants in a variety of package sizes
Compliance: PICMG 2.11, PICMG 3.0, VITA 41



FEATURES: Hot swap capability • AC/DC operation in a single connector • Signal contacts for hardware management • Blind mating • Sequential mating • Large Surface Area Contact Mating System • Wide variety of accessories • Customer specified contact arrangements

Contact Sizes: 8, 20 and 22
Current Ratings: To 40 amperes nominal
Terminations: Crimp, wire solder, straight solder, right angle solder and straight press-fit
Configurations: Multiple variants in both standard and high densities
Qualifications: MIL-DTL-24308, Goddard Space Flight 311P, MIL-C-39029, IP65, IP67



FEATURES: Three performance levels available: professional quality, military quality and space-flight quality provide multiple performance to cost choices • Options include thermocouple contacts, filtered, environmentally sealed and dual port package including mixed density • Broad selection of accessories

Contact Sizes: 16, 20 and 22
Current Ratings: To 13 amperes
Terminations: Crimp, wire solder, straight solder and right angle solder
Configurations: Multiple variants in both standard and high densities
Qualifications: MIL-DTL-28748, MIL-C-39029, CCITT V.35



FEATURES: Two performance levels available: industrial quality and military quality provide two performance to cost choices • Large Surface Area Contact Mating System • A wide variety of accessories • Broad selection of contact variants and package sizes

Contact Sizes: 12, 16, 20 and 22
Current Ratings: To 25 amperes nominal
Terminations: Crimp, wire solder, straight solder and right angle solder
Configurations: Multiple variants in two package sizes
Qualifications: Environmental protection to IP67



FEATURES: Non-corrodible / lightweight composite construction • EMI/RFI shielded versions • Thermocouple contacts • Environmentally sealed versions • Rear insertion/ front release of removable contacts • Two level sequential mating • Overmolding available on full assemblies

All Positronic connector products can be supplied as part of cable assemblies whose technical characteristics would reflect those of the connectors being used within the assembly.



FEATURES: Shorten the supply chain and reduce additional costs and delays by "cablizing" • Overmolding available • Shielded and environmentally sealed versions available • Power cables and access boxes which meet the SAE J2496 specification

Contact Sizes: 8, 12, 16, 20 and 22
Current Ratings: To 40 amperes nominal
Terminations: Feed through is standard; flying leads and board mount available upon request
Configurations: See D-Subminiature and Circular Configurations above
Qualifications: Space-D32



FEATURES: Intended for use as an electrical feedthrough in high vacuum applications • Leakage rate: 1×10^{-9} mbar.l/s • Signal, power, coax and high voltage versions available • Connectors can be mounted on flange assembly per customer specification

For more information, visit www.connectpositronic.com or call your nearest Positronic sales office as given on the back of this catalog.

NORTH AMERICAN HEADQUARTERS

UNITED STATES, Springfield, Missouri

Factory Sales and Engineering Offices (800) 641-4054

PUERTO RICO, Ponce Factory

Factory Sales and Engineering Offices (787) 841-0920

MEXICO

Factory Sales and Engineering Offices (800) 872-7674

CANADA

Factory Sales and Engineering Offices (800) 327-8272

PACIFIC BASIN HEADQUARTERS

SINGAPORE, Asian Factory

Factory Sales and Engineering Offices 65-6842-1419

Malaysia Distribution 60-4-644-9688

Taiwan Sales Office 8862-2937-8775

China (Shanghai) Sales Office 8621-6487-3477

Japan Sales Office 813-5661-3047

Australia Distribution (Military) 612-8966-3600

Australia Distribution (NSW & QnsInd only) 612-4329-1822

Hong Kong Sales Office 852-2187-1343

India Sales Office 91-20-2544-3921

South Korea Distribution 822-372-0747

EUROPEAN HEADQUARTERS

FRANCE, Auch Factory

Factory Sales and Engineering Offices 33 (0)5 62 63 44 91

EUROPE, Direct Sales Offices

Northern France Sales Office 33 (0)1 45 88 13 88

Southern France Sales Office 33 (0)4 67 72 80 28

Italy Sales Office 39 2 54 116 106

Germany Sales Office 49 2351 63 47 39

EUROPE, Technical Agents

Technical Agents in Austria, Benelux, Denmark, Finland, Greece, Ireland, Scotland, Slovenia, Spain, Sweden, Switzerland and the United Kingdom

MIDEAST, Technical Agents

Technical Agents in Israel and Turkey



POSITRONIC INDUSTRIES, INC.

423 N Campbell Ave • PO Box 8247 • Springfield, MO 65801
Tel (417) 866-2322 • Fax (417) 866-4115 • Toll Free (800) 641-4054
info@connectpositronic.com

POSITRONIC INDUSTRIES, S.A.S.

Zone Industrielle d'Engachies • 46 Route d'Engachies
France 32020 Auch Cedex 9
Telephone 33 (0)5 62 63 44 91 • Fax 33 (0)5 62 63 51 17
contact@connectpositronic.com

POSITRONIC ASIA PTE LTD.

3014A Ubi Road 1 #07-01 • Singapore 408703
Telephone (656) 842 1419 • Fax (656) 842 1421
singapore@connectpositronic.com