ODD Series

PROFESSIONAL QUALITY, REMOVABLE CONTACT, HIGH DENSITY SUBMINIATURE-D CONNECTORS

FOR SHELTERED INDOOR/OUTDOOR ENVIRONMENTAL APPLICATIONS

Size 22 Contacts, Removable Crimp and Fixed Press-Fit and **Solder Printed Board Mount**

Professional Quality

U.L. Recognized File #E49351

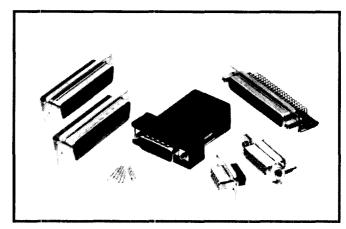
CSA Recognized File #LR54219

Telecommunication U.L. File #14098

ODD Series connectors are low cost, professional quality, high density rectangular connectors recommended for use in sheltered, non-corrosive indoor environments having normal ventilation.

ODD Series connectors utilize precision machined, removable contacts having closed barrel crimp terminations and solder cup wire terminations. For printed board mount application, press-fit and straight solder printed board mount and 90° angled solder terminations are available.

Female removable contacts feature a rugged "Robi-D Open



Entry" design. Female, fixed contacts for board mounted applications feature both rugged Robi-D design and standard open entry design, available to customer requirements.

Six standard contact variants are offered in arrangements of 15, 26, 44, 62, 78, and 104 contacts. ODD Series connectors are mateable and compatible with other high density D-subminiature connectors conforming to MIL-DTL-24308, and are L. and CSA recognized.

ODD Series connectors are widely used in computer and industrial control applications.

ODD SERIES TECHNICAL CHARACTERISTICS

MATERIALS AND FINISHES:

Insulators:

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:

Professional quality – gold flash over nickel plate. Other finishes available upon

request.

Shells:

Steel or brass with tin plate, zinc plate

with dichromate seal.

Mounting Spacers:

Nylon, plastic and brass, zinc plate with

dichromate seal

Vibration Lock Systems:

Slide lock and lock tabs, steel with nick-

el plate.

Push-On Fasteners:

Phosphor bronze or beryllium copper with tin

Jackscrew Systems:

Steel with zinc plate and dichromate

seal, or clear zinc plate.

Hoods:

Thermoplastic UL 94V-0. Composite, brass or steel with zinc plate and

dichromate seal.

ELECTRICAL CHARACTERISTICS:

Contact Current Rating:

5 amperes nominal.

Initial Contact Resistance: 0.010 ohms maximum.

Proof Voltage:

1000 V r.m.s.

Insulator Resistance:

5 G ohms.

Clearance and Creepage

Distance (minimum):

0.042 inch (1.06mm).

Working Voltage:

300 V r.m.s.

CLIMATIC CHARACTERISTICS:

Temperature Range:

-55°C to +125°C.

Damp Heat, Steady State:

10 days.

MECHANICAL CHARACTERISTICS:

Removable Contacts:

Insert contact to rear face of insulator and release from rear face of insulator. Size 22 contact, male - 0.030 inch (0.76mm) diameter; female removable contacts feature a rugged "Robi-D Open Entry" design.

Fixed Contacts, Board Mounted Applications:

Female contact - both rugged Robi-D design and standard open entry design available to customer requirements.

Contact Retention In Insulator:

9 lbs. (40 N).

Contact Terminations:

Closed barrel crimp, wire sizes 22 AWG (0.3mm²) through 30 AWG (0.05mm²). Solder cup wire, 0.035 inch (0.89mm) hole diameter for 22 AWG (0.3mm²) wire

0.020 inch (0.5mm) or 0.030 inch (0.76mm) diameter straight and 90° printed board mount contact termina-

Solid Press-Fit - 0.034 inch (0.86mm) across points with 0.020 inch (0.51mm) lead. Solid metal construction. Compliant Press-Fit - 0.047 (1.19mm) diameter with 0.022 inch

(0.56mm) lead-in diameter.

Male shells may be dimpled for EMI/ESD ground paths.

Trapezoidally shaped shells and polarized jackscrews.

Mounting To Angle Brackets:

Polarization:

Shells:

Jackscrews and riveted fasteners with 0.120 inch (3.05mm) clearance hole, and threaded riveted fasteners with 4-40 threads and nylon lock inserts.

Mounting To Printed Board:

Rapid installation push-on fasteners

and mounting posts.

Locking Systems: Jackscrews and vibration locking sys-

Mechanical Operations: 500 operations minimum per IEC 512-5.



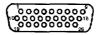
FOR SHELTERED INDOOR/OUTDOOR ENVIRONMENTAL APPLICATIONS

CONTACT VARIANTS

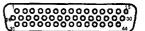
FACE VIEW OF MALE OR REAR VIEW OF FEMALE



ODD 15



ODD 26

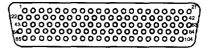


ODD 44

ODD 62

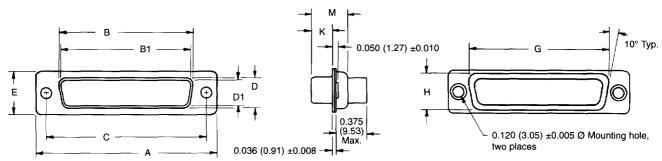


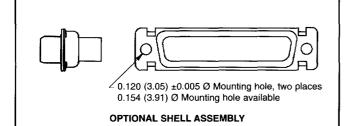
ODD 78

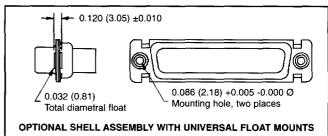


ODD 104

STANDARD SHELL ASSEMBLY







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
ODD 15 M	1.213 (30.81)		<u>0.666</u> (16.92)	<u>0.984</u> (24.99)		0.329 (8.36)	<u>0.494</u> (12.55)	<u>0.759</u> (19.28)	<u>0.422</u> (10.72)	0.233 (5.92)	<u>0.422</u> (10.72)
ODD 15 F	1.213 (30.81)	<u>0.643</u> (16.33)		<u>0.984</u> (24.99)	<u>0.311</u> (7.90)		<u>0.494</u> (12.55)	<u>0.759</u> (19.28)	<u>0.422</u> (10.72)	0.243 (6.17)	0.429 (10.90)
ODD 26 M	1.541 (39.14)		0.994 (25.25)	1.312 (33.32)		0.329 (8.36)	<u>0.494</u> (12.55)	1.083 (27.51)	<u>0.422</u> (10.72)	0.233 (5.92)	<u>0.422</u> (10.72)
ODD 26 F	1.541 (39.14)	0.971 (24.66)		1.312 (33.32)	<u>0.311</u> (7.90)		<u>0.494</u> (12.55)	<u>1.083</u> (27.51)	<u>0.422</u> (10.72)	0.243 (6.17)	<u>0.429</u> (10.90)
ODD 44 M	2.088 (53.04)		1.534 (38.96)	1.852 (47.04)		0.329 (8.36)	0.494 (12.55)	<u>1.625</u> (41.28)	<u>0.422</u> (10.72)	0.230 (5.84)	<u>0.426</u> (10.82)
ODD 44 F	2.088 (53.04)	1.511 (38.38)		1.852 (47.04)	<u>0.311</u> (7.90)		<u>0.494</u> (12.55)	<u>1.625</u> (41.28)	<u>0.422</u> (10.72)	0.243 (6.17)	<u>0.429</u> (10.90)
ODD 62 M	2.729 (69.32)		2.182 (55.42)	2.500 (63.50)		0.329 (8.36)	<u>0,494</u> (12.55)	<u>2.272</u> (57.71)	<u>0.422</u> (10.72)	0.230 (5.84)	<u>0.426</u> (10.82)
ODD 62 F	<u>2.729</u> (69.32)	2.159 (54.84)		2.500 (63.50)	<u>0.311</u> (7.90)		<u>0.494</u> (12.55)	<u>2.272</u> (57.71)	<u>0.422</u> (10.72)	0.243 (6.17)	0.429 (10.90)
ODD 78 M	<u>2.635</u> (66.93)		2.079 (52.81)	<u>2.406</u> (61.11)		0.441 (11.20)	<u>0.605</u> (15.37)	<u>2.178</u> (55.32)	<u>0.534</u> (13.56)	0.230 (5.84)	0.426 (10.82)
ODD 78 F	2.635 (66.93)	2.064 (52.43)		2.406 (61.11)	0.423 (10.74)		<u>0.605</u> (15.37)	2.178 (55.32)	<u>0.534</u> (13.56)	0.243 (6.17)	<u>0.429</u> (10.90)
ODD 104 M	<u>2.729</u> (69.32)		<u>2.212</u> (56.18)	<u>2.500</u> (63.50)		<u>0.503</u> (12.78)	<u>0.668</u> (16.97)	<u>2.302</u> (58.47)	<u>0.596</u> (15.14)	0.230 (5.84)	<u>0.426</u> (10.82)
ODD 104 F	<u>2.729</u> (69.32)	<u>2.189</u> (55.60)		2.500 (63.50)	0.485 (12.32)		0. <u>668</u> (16.97)	<u>2.302</u> (58.47)	<u>0.596</u> (15.14)	0.243 (6.17)	<u>0.429</u> (10.90)

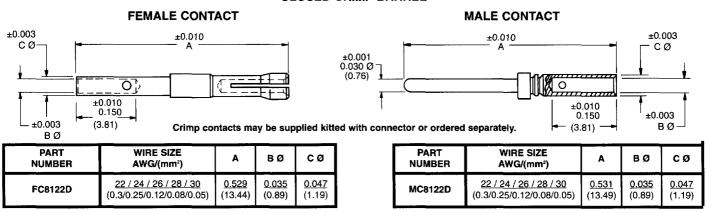
DIMENSIONS ARE IN INCHES (MILLIMETERS). ALL DIMENSIONS ARE SUBJECT TO CHANGE.



FOR SHELTERED INDOOR/OUTDOOR ENVIRONMENTAL APPLICATIONS

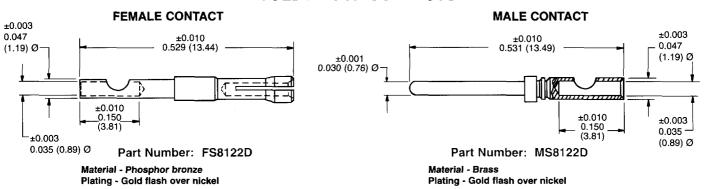
CRIMP CONTACTS

CLOSED CRIMP BARREL

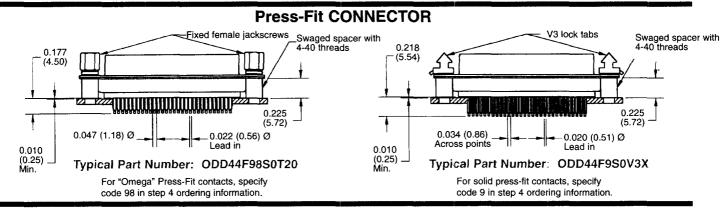


Material - Phosphor bronze Plating - Gold flash over nickel Material - Brass Plating - Gold flash over nickel

SOLDER CUP CONTACTS



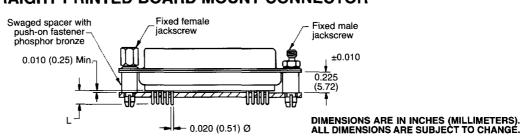
Solder contacts may be supplied kitted with connector or ordered separately.



STRAIGHT PRINTED BOARD MOUNT CONNECTOR

Code No.	L
3	<u>0.150</u> (3.81)
32	<u>0.300</u> (7.62)

For straight printed board mount contacts specify code no. in step 4 of ordering information



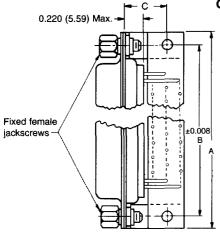
Typical Part Number: ODD62F3S60T6X



FOR SHELTERED INDOOR/OUTDOOR ENVIRONMENTAL APPLICATIONS

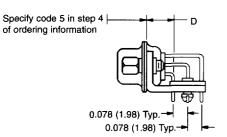
90° PRINTED BOARD MOUNT CONNECTOR

CODE 5, 0.450 (11.50) CONTACT EXTENSION RUGGED "Robi-D Open Entry" FEMALE CONTACT

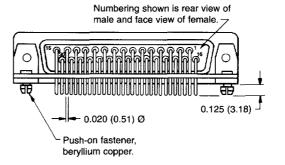


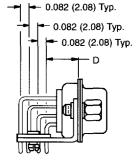
ODD005R7000 0.450 (11.43) CONTACT EXTENSION								
PART NUMBER	A	В	C	D				
ODD1505R7000	1.204	<u>0.984</u>	<u>0.528</u>	<u>0.450</u>				
	(30.58)	(24.99)	(13.41)	(11.43)				
ODD2605R7000	<u>1.532</u>	<u>1.312</u>	<u>0.528</u>	<u>0.450</u>				
	(38.91)	(33.32)	(13.41)	(11.43)				
ODD4405R7000	<u>2.072</u>	<u>1.852</u>	<u>0.528</u>	<u>0.450</u>				
	(52.63)	(47.04)	(13.41)	(11.43)				
ODD6205R7000	2.720	<u>2.500</u>	<u>0.528</u>	<u>0.450</u>				
	(69.09)	(63.50)	(13.41)	(11.43)				
ODD7805R7000	2.626	<u>2.406</u>	<u>0.573</u>	<u>0.450</u>				
	(66.70)	(61.11)	(14.55)	(11.43)				

See next page for size 104 Right Angle Connectors.



Typical Part Number: ODD44F5R7NT2X

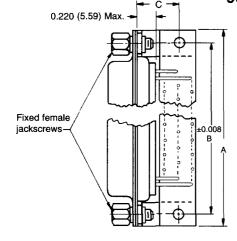


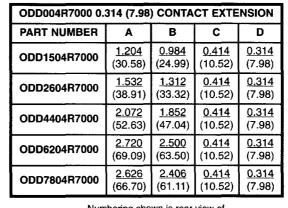


Typical Part Number: ODD78M5R7NT20

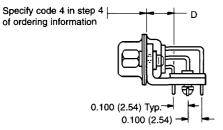
90° PRINTED BOARD MOUNT CONNECTOR

CODE 4, 0.314 (7.98) CONTACT EXTENSION SLOTTED OPEN ENTRY FEMALE CONTACT

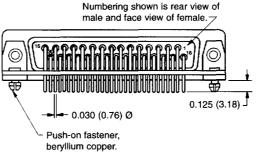


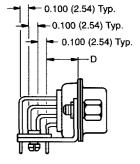


See next page for size 104 Right Angle Connectors.



Typical Part Number:
ODD44F4R7NT2X
DIMENSIONS ARE IN INCHES (MILLIMETERS).
ALL DIMENSIONS ARE SUBJECT TO CHANGE.



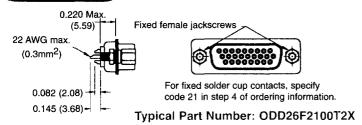


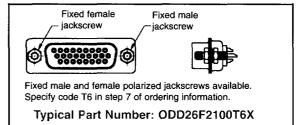
Typical Part Number: ODD78M4R7NT20



FOR SHELTERED INDOOR/OUTDOOR ENVIRONMENTAL APPLICATIONS

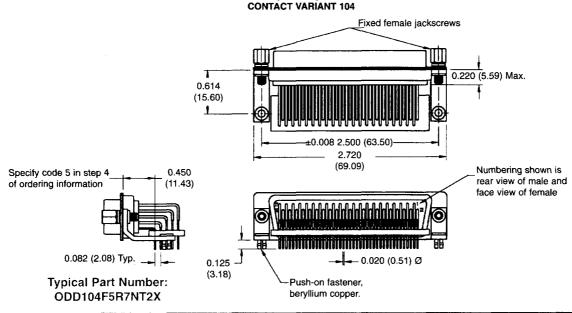
FIXED CONTACT SOLDER CUP CONNECTOR





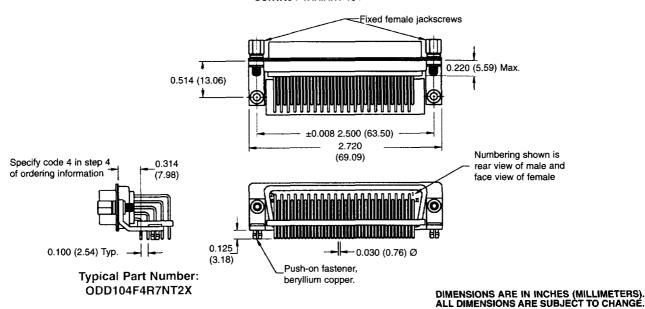
90° PRINTED BOARD MOUNT CONNECTOR

CODE 5, 0.450 (11.43) CONTACT EXTENSION RUGGED "Robi-D Open Entry" FEMALE CONTACT



90° PRINTED BOARD MOUNT CONNECTOR

CODE 4, 0.314 (7.98) CONTACT EXTENSION SLOTTED OPEN ENTRY FEMALE CONTACT CONTACT VARIANT 104

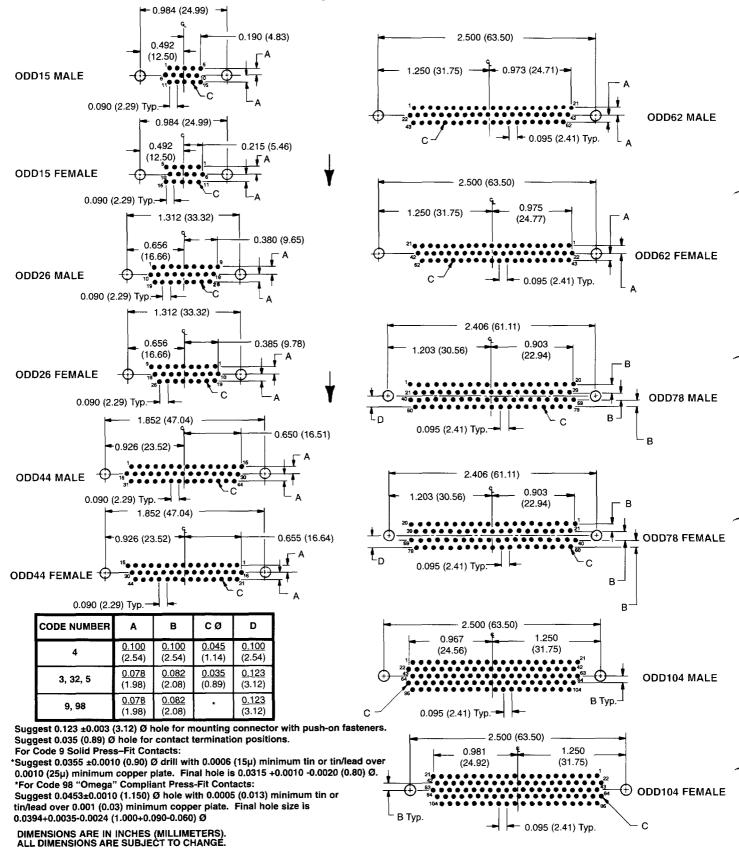




FOR SHELTERED INDOOR/OUTDOOR ENVIRONMENTAL APPLICATIONS

90° AND STRAIGHT PRINTED BOARD CONTACT HOLE PATTERN

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



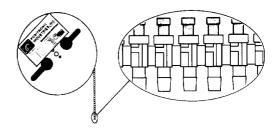


FOR SHELTERED INDOOR/OUTDOOR ENVIRONMENTAL APPLICATIONS

REELS FOR AUTOMATIC FEED PNEUMATIC CRIMP TOOLS

Contacts may be supplied in plastic carriers, packaged in reels holding 2,000 contacts for use with the automatic feed pneumatic crimp tools, catalog part number 9550-1. The same type carrier is used for both male and female contacts.

All male and female crimp contacts can be ordered in reels by adding letter "R" after the contact part number, such as MC8122DR for a male contact and FC8122DR for a female



Enlarged section of plastic contact carrier.

ORDERING INFORMATION - CODE NUMBERING SYSTEM

Specify Complete Connector By Following Steps 1 Through 9

			Ins	ert "0	" Whei	n Step	is Not	Used				
	STEP	1	2	3	4	5	6	7	8	7	9]
		ODD	62	F	5	R7	N	Т6	S	-]
STEP 1 - Basic Series ODD Series		J										Special Options es Department.
STEP 2 - ODD Series Conn 15, 26, 44, 62, 78, 104	ector V	ariants										ell Options d with Dichromate Seal.
STEP 3 - Connector Gende M - Male F - Female	r			•						X - Tir	ainless S n Plated. n Plated	
STEP 4 - Type of Contacts 0 - Ordered Without Contacts 1 - Crimp, 22 AWG-30 AWG 2 - Solder cup, 22 AWG-30 A Removable contacts. 21 - Solder cup, 22 AWG-30 A tacts. 3 - Solder, Straight Printed Boa 4 - Solder, Straight Printed Board M 5 - Solder, Straight Printed Board M	(0.3mm²– WG (0.3r WG (0.3r ard Mount rd Mount	mm²0.0 mm²0.0 t with 0.3 with 0.30 0.314 (7	05mm²), 05mm²), 150 (3.8 00 (7.62 7.98) Co	Fixed of 1) Tail L) Tail Le ontact Ex	ength.			0 - V3 - V5 - VL - T - T6 - E - E2 -	None. Lock Lock I Fixed Fixed Fixed Rotati	Tab, cor Tab, cor Lever, u Female Female Male ar ng Male ng Male	nnector f nnector r sed with Jacksci Jacksci Jackscr Jackscr Screw L	rews. tle Polarized Jackscrews. ews.
 Solder, 90° Printed Board M Extension. Press-Fit, Solid. Press-Fit, Compliant. *STEP 5 - Mounting Style Application of the Press of the		0.430 (1		omaci			0 - J - L -	None. Hood, Hood, Hood,	Top O _l Side C Top O _l	pening, Opening, pening,	Plastic. , Plastic. Plastic v	Fasteners with Rotating Male

- Mounting Hole, 0.120 (3.05) Ø.
- Bracket, Mounting, 90° Metal with Cross Bar. Bracket, Mounting, 90° Plastic with Cross Bar. B8 -
- Float Mounts, Universal.
- Threaded Post, Brass, 0.225 (5.71) Length.
- P2 -Threaded Post, Nylon, 0.225 (5.71) Length.
- Bracket, Mounting, 90° Metal, Swaged to Connector with 4-40 R2 Thread Fixed Female Jackscrews with Cross Bar.
- Bracket, Mounting, 90° Metal, Swaged to Connector with 0.120 (3.05) Ø Mounting Hole with Cross Bar.
- Bracket, Mounting, 90° Metal, Swaged to Connector with 4-40 Threads with Cross Bar.
- Bracket, Mounting, 90° Metal, Swaged to Connector with 4-40 R8 -Locknut with Cross Bar.
- Swaged Spacer, 4-40 Threads, 0.225 (5.71) Length.
- Swaged Spacer, 4-40 Threads, 0.125 (3.18) Length.
- Swaged Locknut, 4-40 Threads. **S5**
- Swaged Spacer with Push-on Fasteners, 4-40 Threads, 0.225 (5.71) Length.
- Swaged Spacer with Push-on Fastener for use with Ferrite Inductor, 4-40 Threads, 0.375 (9.53) Length.

- Jackscrews. Available in size 78 and 104 only.
- Y6 Hood, Top Opening, Plastic with Rotating Male and Female Polarized Jackscrews. Available in size 78 and 104 only.
- Hood, Top or Side Opening, Robust Extended Height, Composite and Plastic with Rotating Male Jackscrews. Available in size 15, 26, 44, 62 and 78 only.
- Hood, Top Opening, Metal. Available in size 26, 44, 62, and 78 only.
- Hood, EMI/RFI, Metal. Available in size 15, 26, 44, 62, and 78 only.
- Hood, Top or Side Opening, Plastic. Available in size 15, 26, and 44 only.
- Push-on Fastener, for 90° Mounting.
- Ferrite Inductor.
- Ferrite Inductor with Push-on Fastener, for 90° ď Mounting Brackets.

*For additional information on accessories listed in steps 5, 6 and 7, see Accessory Catalog.

**Ferrite inductor is available on contact types 32 and 5 only.



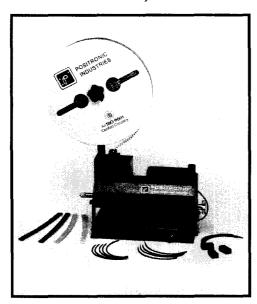
FOR SHELTERED INDOOR/OUTDOOR ENVIRONMENTAL APPLICATIONS

AUTOMATIC FEED CRIMP TOOL, PNEUMATICALLY ACTUATED

Part No. 9550-1

This fast cycling automatic feed crimp tool produces an 8 indent crimp on wire sizes 20 AWG (0.5mm²) through 32 AWG (0.03mm²). ODD 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	AXIAL LOAD					
AWG/(mm²)	POUNDS/(N)					
<u>22</u>	<u>12</u>					
(0.3)	(53)					
<u>24</u>	<u>8</u>					
(0.25)	(36)					
<u>26</u>	<u>5</u>					
(0.12)	(22)					
<u>28</u>	<u>3</u>					
(0.08)	(13)					
<u>30</u>	1.5					
(0.05)	(4.4)					

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

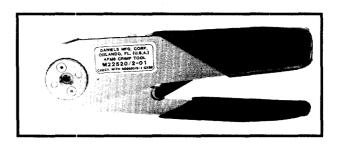
Values may change depending upon what type of wire is used.

MINIATURE STEP ADJUSTABLE TOOL

(M22520/2-01) Part No. 9507

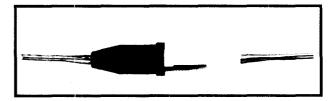
This miniature step adjustable hand crimping tool produces an 8 indent crimp configuration and will crimp wire sizes 20 AWG (0.5mm²) through 32 AWG (0.03mm²).

To crimp female contacts, order contact positioner 9502-3. To crimp male contacts, order contact positioner 9502-4. 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 ODD Series contacts.



INSERTION/REMOVAL TOOL (M81969/1-04)

One end of this tool is used to insert contacts into ODD 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 ODD series contacts.

CRIMP TOOLS	POSITIONERS FOR FC8122D	POSITIONERS FOR MC8122D		
9507, HAND CRIMP TOOL	9502-3	9502-4		
9550-1, AUTOMATIC FEED PNEUMATIC CRIMP TOOL	Supplied in reels	Supplied in reels		