WPI Viking
PRINTED CIRCUIT CONNECTORS

A Commitment To Service
# TABLE OF CONTENTS

## HOW TO USE THIS CATALOG

This catalog is divided into two sections: card-edge and two-piece connectors. The card-edge line is organized in series by contact centers. Each series has the standard sizes and standard options indicated by **bold italic type**. Standard items are readily available from local Viking distributors. Nonstandard items and custom products are manufactured to order and require a factory quotation for price and delivery.

### CARD-EDGE

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<th>Page</th>
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<td>.100 x .145 (2.54 x 3.68)</td>
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## Page Reference by Series Identifier

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<tr>
<td>VSBX II</td>
<td>28</td>
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</table>

### MIL Specs

Connectors meet or exceed requirements of MIL-C-21097 for card-edge connectors.

### UL

All series shown in this catalog are listed under the component program of Underwriters Laboratories, Inc., File E74125.

Wire Wrap is a registered trademark of the Gardner-Denver Company.
These .050” contact center connectors offer an opportunity for greater contact density in the card-edge format. Up to 64 dual positions are available, with dip solder terminations configured in either 2 rows or 4 staggered rows to facilitate loading into the p.c. board. Note that the smaller contact dimensions reduce the ability of the connector to withstand mistreatment and also require tighter tolerances on mating p.c. board traces.

**OUTLINE AND DIMENSIONS**

Contact Identification:
Numbers: 1, 5, 10, ... 64
Letters: A Near side, B Far side

<table>
<thead>
<tr>
<th>CONTACT POSITIONS</th>
<th>A ±.007 (±.18)</th>
<th>B ±.007 (±.18)</th>
<th>C ±.010 (±.25)</th>
<th>D ±.007 (±.18)</th>
<th>E ±.015 (±.38)</th>
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</thead>
<tbody>
<tr>
<td>6/12</td>
<td>.250 (6.35)</td>
<td>.425 (10.82)</td>
<td>.520 (13.21)</td>
<td>.600 (20.32)</td>
<td>.102 (25.91)</td>
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<td>10/20</td>
<td>.450 (11.43)</td>
<td>.626 (15.90)</td>
<td>.720 (18.29)</td>
<td>.100 (25.40)</td>
<td>1.220 (30.99)</td>
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<td>15/30</td>
<td>.700 (17.78)</td>
<td>.876 (22.25)</td>
<td>.970 (24.64)</td>
<td>1.250 (31.75)</td>
<td>1.470 (37.34)</td>
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<td>25/50</td>
<td>1.200 (30.48)</td>
<td>1.376 (34.55)</td>
<td>1.470 (37.34)</td>
<td>1.750 (44.45)</td>
<td>1.970 (50.04)</td>
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<td>30/60</td>
<td>1.450 (36.83)</td>
<td>1.626 (41.30)</td>
<td>1.720 (43.69)</td>
<td>2.000 (50.80)</td>
<td>2.220 (56.39)</td>
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<td>40/80</td>
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<td>2.126 (54.00)</td>
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<td>2.500 (63.50)</td>
<td>2.720 (69.09)</td>
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<td>3.150 (80.01)</td>
<td>3.326 (84.49)</td>
<td>3.420 (86.87)</td>
<td>3.700 (93.98)</td>
<td>3.920 (99.57)</td>
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</tbody>
</table>

Note: Dimensions are in inches and (millimeters). Tolerance ±.010(.25) unless otherwise specified.
**SPECIFICATIONS**

**ELECTRICAL**
- Operating Voltage: 250 Vdc (sea level)
- Current Rating: 0.5 amp max.
- Dielectric Withstanding Voltage: 375 Vrms min.
- Insulation Resistance: 5000 megohms min.
- Voltage Drop: 20 mV max.

**MECHANICAL**
- Contact Retention: 2.5 lbs. min.
- Insertion Force: 1 to 8 oz. per opposing contact pair when using .062 (1.57) steel test blade.
- Withdrawal Force: .25 oz. min. per opposing contact pair when using .054 (1.37) steel test blade.

**MATERIALS**
- **INSULATOR:** Diallyl Phthalate, per MIL-M-14, U.L. 94V-0 approved, color green
- **CONTACTS:** Copper alloy, gold plated per MIL-G-45204, Type II, Grade C, over nickel.
- **NOTE:** All tests are in accordance with requirements of MIL-C-21097.

**CONTACT TERMINATIONS**
- **NOTE:**
  - Code V grid spacing is .050 (1.27) x .229 (5.81).
  - All dip solder terminations are .020 (.51) X .009 (.23) and fit .028 (.71) minimum diameter p.c. board hole.

**RECOMMENDED P.C.B. HOLE PATTERN**
- CONTACT NO. 1B (LONG)
  - .150 TYP.
- CONTACT NO. 1A (SHORT)
  - .050 TYP.
- CONTACT NO. 2A (LONG)
  - .036 MIN. TYP.

**MOUNTING STYLES**
- **THRU HOLE CODE 5**
- **NO EARS CODE 12**

**ORDERING INFORMATION**

| KH | 25 | /1 | L | V | 5 |

**CONTACT PLATING**
- KH: .000010 gold engagement and termination areas
- VH: .000030 gold engagement and termination areas

**NUMBER OF CONTACT PAIRS**
- 6, 10, 15, 25, 30, 40, 64

**INSULATOR MATERIAL**
- 1: Diallyl Phthalate (green)

**SERIES IDENTIFIER**
- L: .050 (1.27) Contact Centers; .062 (1.57) P.C. Board

**CONTACT TERMINATIONS**
- V: Dip Solder
- Z: Dip Solder Staggered Rows

**MOUNTING STYLES**
- 5: Thru Hole
- 12: No Ears

*These series are nonstandard and require a factory quotation for price and delivery.*
These low profile .100" contact center connectors accept 1/16" (.062") p.c. boards. All popular sizes from 6 to 50 positions are available with either pierced eyelet or dip solder terminations. The termination row spacing is .145". Bifurcated, full-bellows contacts give the best performance in conditions of repeated insertion and withdrawal of the p.c. board. The variety of possible material combinations allows a choice of emphasis on performance or cost savings.

### OUTLINE AND DIMENSIONS

![Diagram showing outline and dimensions of the contact centers.](image)

Contact Identification:
- Numbers: B 1, 2, 3, ..., 50 B
- A 1, 2, 3, ..., 50 A

### POLARIZATION

Between-Contacts Polarizing Key
Part No. 091-0071-000
See page 34 for further information.

<table>
<thead>
<tr>
<th>CONTACT POSITIONS</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>E' FLOAT MTG</th>
<th>F</th>
<th>&quot;N&quot;</th>
<th>&quot;E&quot;</th>
<th>&quot;DD&quot;</th>
<th>&quot;V&quot;</th>
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<td>.668 (.26.94)</td>
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Note: Dimensions are in inches and (millimeters). Tolerance ±.010 (.25) unless otherwise specified. For other sizes, please call the factory.
**SPECIFICATIONS**

**ELECTRICAL**
- Operating Voltage: 600 Vdc (sea level)
- Current Rating: 3 amp max.
- Dielectric Withstanding Voltage: 650 Vrms min.
- Insulation Resistance: 5000 megohms min.
- Voltage Drop: 30 mV max.

**TEMPERATURE RANGE**
- Dialylic Phthalate & Phenolic: -65°C to +125°C (-85°F to +257°F)
- Polyester: -55°C to +105°C (-67°F to +221°F)

**MECHANICAL**
- Contact Retention: 3 lbs. min.
- Insertion Force: 2 to 16 oz. per opposing contact pair when using .062 (1.57) steel test blade.
- Withdrawal Force: 1 oz. min. per opposing contact pair when using .054 (1.37) steel test blade.

**MATERIALS**
- **INSULATOR:**
  - Dialylic Phthalate, per MIL-M-14, U.L. 94V-0 approved, color green

- **Phenolic:** glass reinforced per MIL-M-14, type MFH, U.L. 94V-0 approved, color black
- **Thermoplastic Polyester:** glass reinforced, U.L. 94V-0 approved, color black

**CONTACTS:**
- Copper alloy, gold plated per MIL-G-45204, Type II, Grade C, over nickel.

**INSERTS:**
- Stainless steel, passivated

**NOTE:**
- All tests are in accordance with requirements of MIL-C-21097

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**CONTACT TERMINATIONS**

Accepts 3 No. 26 AWG wires.

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<th>G SEE TABLE</th>
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<tbody>
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<td>CODE N</td>
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**DIP SOLDER**

| CODES | E, DD, V |
---|---------|

---

**MOUNTING STYLES**

<table>
<thead>
<tr>
<th>THREAD INSERT</th>
<th>THRU HOLE</th>
<th>FLOAT MOUNT</th>
<th>NO EARS</th>
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<tbody>
<tr>
<td>CODE 3</td>
<td>CODE 5</td>
<td>CODE 8</td>
<td>CODE 12</td>
</tr>
</tbody>
</table>

---

**ORDERING INFORMATION**

| 3 | VT | 22 | /1 | J | N | 5 |
---|----|----|----|---|---|---|

---

**OPTIONS**

**POLARIZATION**
- 3: Between-Contacts

**CONTACT PLATING CODES**
- **KH:** 000010 gold engagement and termination areas
- **KT:** 000010 gold engagement area; .00100 min. tin lead termination area
- **VH:** 000030 gold engagement and termination area
- **VN:** 000030 gold engagement area; .000010 tin lead termination area
- **VT:** 000030 gold engagement area; .000100 min. tin lead termination area

**NUMBER OF CONTACT PAIRS**
- 5, 10, 15, 18, 20, 22, 25, 28, 30, 35, 36, 40, 50

**INSULATOR MATERIAL**
- 1: Dialylic Phthalate (green)
  - Standard with VH, VN, and VT platings
  - Not available with KT or KH plating
- 2: Polyester (black)
  - Standard with KH, KT, VN, and VT platings
  - Not available with VH plating or with N termination
- 9: Phenolic (black)
  - Standard with code N termination

**MOUNTING STYLES**
- 3: Threaded Insert
- 5: Thru Hole
- 8: Floating Mount
- 12: No Ears

**CONTACT TERMINATIONS**
- **N:** Pierced Eyelet
  - Not available with polyester insulator
- **E:** Short Dip Solder
- **DD:** Medium Dip Solder
- **V:** Long Dip Solder

**SERIES IDENTIFIER**
- **J:** .100 (2.54) Contact Centers
- .062 (1.57) P.C. Board

Standard options are indicated by **bold italic type.**

Nonstandard items require a factory quotation for price and delivery.
Viking's popular Wire Wrap® and round tail dip solder connectors feature cost-effective and reliable semi-bellows contacts. The .025" square wrap posts can be terminated on standard equipment to give a 3-level wrap. The .026" diameter dip solder terminations provide an even 360° solder fillet in a standard .035" diameter p.c. board hole. Termination grid spacing is .100" by .200". A wide range of sizes is available, together with various mounting options.

### Outline and Dimensions

![Diagram of connector dimensions]

### Polarization

**Between-Contacts Polarizing Key**
Part No. 091-0071-000
See page 34 for further information.

<table>
<thead>
<tr>
<th>CONTACT POSITIONS</th>
<th>A (BSC)</th>
<th>±.007</th>
<th>B</th>
<th>±.015</th>
<th>C (±.38)</th>
<th>D</th>
<th>±.010</th>
<th>E (±.15)</th>
<th>F (±.15)</th>
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<tbody>
<tr>
<td>15/30</td>
<td>1.400</td>
<td>1.600</td>
<td>1.760</td>
<td>2.075</td>
<td>2.335</td>
<td>1.650</td>
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<td></td>
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<tr>
<td>18/35</td>
<td>1.700</td>
<td>1.900</td>
<td>2.060</td>
<td>2.375</td>
<td>2.635</td>
<td>1.950</td>
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<tr>
<td>20/40</td>
<td>1.900</td>
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<td>2.260</td>
<td>2.575</td>
<td>2.835</td>
<td>2.150</td>
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</tr>
<tr>
<td>22/44</td>
<td>2.100</td>
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<td>2.460</td>
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<tr>
<td>25/50</td>
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<td>2.760</td>
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<td>2.650</td>
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<tr>
<td>30/60</td>
<td>2.900</td>
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<td>3.260</td>
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<tr>
<td>31/62</td>
<td>3.000</td>
<td>3.200</td>
<td>3.360</td>
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<td>5.130</td>
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<tr>
<td>55/110</td>
<td>5.400</td>
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<td>6.335</td>
<td>5.650</td>
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<tr>
<td>60/120</td>
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<tr>
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<td>7.150</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

* 49/98 version combines 31 position and 18 position into one connector. Consult Factory for dimensions.

**Note:** Dimensions are in inches and (millimeters). Tolerance ±.010 (25) unless otherwise specified. For other sizes, please call the factory.
SPECIFICATIONS

ELECTRICAL
Operating Voltage: 600 Vdc (sea level)
Current Rating: 3 amp max.
Dielectric Withstanding Voltage: 650 Vrms min.
Insulation Resistance: 5000 megohms min.
Voltage Drop: 30 mV max.

TEMPERATURE RANGE
Diallyl Phthalate & Phenolic:
-65°C to +125°C (-85°F to +257°F)
Polyester:
-55°C to +105°C (-67°F to +221°F)

MECHANICAL
Contact Retention: Wire Wrap®8 lbs. min.; Dip Solder 3 lbs min.
Insertion Force: 2 to 10 oz. per opposing contact pair when using .062 (1.57) steel test blade
Withdrawal Force: 1 oz. min. per opposing contact pair when using .054 (1.37) steel test blade

MATERIALS
INSULATOR:
Diallyl Phthalate, per MIL-M-14, U.L. 94V-0 approved, color green

CONTACTS:
Phenolic, glass reinforced per MIL-M-14, type MFH, U.L. 94V-0 approved, color black
Thermoplastic Polyester, glass reinforced, U.L. 94V-0 approved, color black

CONTACTS:
Copper alloy, gold plated per MIL-G-45204, Type II, Grade C, over nickel

INSERTS:
Stainless steel, passivated

NOTE:
All tests are in accordance with requirements of MIL-C-21097.

CONTACT TERMINATIONS

DIP SOLDER
Dip Solder Terminations are .026 (.66) ± .002 (.05) diameter and fit .035 (.89) min. diameter p.c. board hole.

WRAP POST
Wrap posts are .025 (.64) square.

MOUNTING STYLES

FLUSH MOUNT
CODE 1

THREADED INSERT
CODE 3

THRU HOLE
CODE 5

NO EARS
CODE 12

TRANSVERSE THRU HOLE
CODE 15

ORDERING INFORMATION

POLARIZATION
3: Between-Contacts (Internal)

CONTACT PLATING
KH: .000010 gold engagement and termination areas
KT: .000010 gold engagement area; .000100 min. tin lead termination area
VH: .000030 gold engagement and termination areas
VN: .000030 gold engagement area; .000100 min. tin lead termination area
VT: .000030 gold engagement area; .000100 min. tin lead termination area

NUMBER OF CONTACT PAIRS
15, 16, 20, 22, 25, 30, 31, 35, 36, 40, 43, 50, 55, 60, 70

INSULATOR MATERIAL
1: Diallyl Phthalate (green):
Standard with VH, VN, and VT platings
Not available with KT plating
2: Polyester (black):
Standard with KH, KT, VN, and VT platings
Not available with VH plating or sizes above 50 contact positions
3: Phenolic (black) Not available with KT plating in sizes under 50 contact positions

TERMINATION MODIFIERS
(081): Dip Solder
See page 21 for right angle and card extender terminations.

MOUNTING STYLES
1: Flush Mount;
Standard with NK termination only
3: Threaded Insert
5: Thru Hole
12: No Ears;
Standard with NK termination only
15: Transverse Thru Hole

CONTACT TERMINATIONS
ND: Wrap Post
NK: Dip solder

SERIES IDENTIFIER
J: .100 (2.54) Contact Centers .062 (1.57) P.C. Board.

Standard options are indicated by bold italic type.
Nonstandard items require a factory quotation for price and delivery.
Viking's cantilever beam contact card-edge line offers one of the lowest cost card-edge connectors on a .100 x .200 grid size with solder tails.

Viking also includes an 18 + 31 position, Dual Card Slot connector specifically designed for the motherboard I/O slots in the IBM PC AT™ computer or its compatible products.

OUTLINE AND DIMENSIONS

COST DRIVEN CARD-EDGE CONNECTOR

DUAL CARD SLOT CONNECTOR

Contact Identification:
1, 9, 19, 51
2, 10, 20, 62

Contact Identification:
1, 33, 37, 97
2, 36, 38, 98

POLARIZATION

Between contacts
Polarizing Key
Part No. 091-0071-000
See page 34 for further information.

<table>
<thead>
<tr>
<th>CONTACT POSITIONS</th>
<th>A (BSC)</th>
<th>B ±0.007 (±.018)</th>
<th>C ±0.015 (±.038)</th>
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<tbody>
<tr>
<td>18/36</td>
<td>1.700 (43.18)</td>
<td>1.900 (48.26)</td>
<td>2.060 (52.32)</td>
</tr>
<tr>
<td>31/62</td>
<td>3.000 (76.20)</td>
<td>3.200 (81.28)</td>
<td>3.360 (85.34)</td>
</tr>
</tbody>
</table>

49/98 Dual Card Slot. See outline above for dimensions.

Note: Dimensions are in inches and (millimeters). Tolerance ±0.010(.25) unless otherwise specified. For other sizes, please call the factory.
**SPECIFICATIONS**

**ELECTRICAL**
- Operating Voltage: 600 Vdc (sea level)
- Current Rating: 3 amp max.
- Dielectric Withstanding Voltage: 650 Vrms min.
- Insulation Resistance: 5000 megohms min.
- Voltage Drop: 30 mV max.

**MECHANICAL**
- Contact Retention: 3 lbs. min.
- Insertion Force: 6 to 10 oz. average per contact pair when tested with a .062" p.c. board
- Withdrawal Force: 2 to 4 oz. average per contact pair when tested with a .062" p.c. board

**CONTACTS:**
- Copper alloy, gold plated per MIL-G-45204, Type II, Grade C, over nickel.

**NOTE:**
- All tests are in accordance with requirements of MIL-C-21097

**TEMPERATURE RANGE**
- -55°C to +105°C (-67°F to +221°F)

**CONTACT TERMINATIONS**
- Note: dip solder terminations fit .042 (1.07) minimum diameter P.C. board hole.

**ORDERING INFORMATION**

<table>
<thead>
<tr>
<th>POLARIZATION</th>
<th>CONTACT PLATING CODES</th>
</tr>
</thead>
<tbody>
<tr>
<td>3: Between-Contacts</td>
<td>KT: .000010 gold engagement area; .000100 min. tin lead termination area</td>
</tr>
<tr>
<td>2:</td>
<td>VT: .000030 gold engagement area; .000100 min. tin lead termination area</td>
</tr>
</tbody>
</table>

**NUMBER OF CONTACT PAIRS**
- 18, 31 and 49 Dual Card Slot (18 + 31)

**INSULATOR MATERIAL**
- Polyester (black)

**SERIES IDENTIFIER**
- J: .100 (2.54) Contact Centers; .062 (1.57) P.C. Board

**CONTACT TERMINATIONS**
- FA: Short Dip Solder
- FB: Short Dip Solder with Retention Feature
- FF: Dip Solder

**MOUNTING STYLE**
- 12: No Ears

**MODIFICATION**
- DCS: Dual Card Slot - only available with 49 position (18 + 31)

Standard options are indicated by bold italic type. Nonstandard items require a factory quotation for price and delivery.
The Compliant Pin Card-Edge connector is ideal for use with multilayer backplane assemblies which require reliable, easy-to-fit connectors. By eliminating the need for soldering, the compliant pin series reduces assembly time and costs. The Viking Compliant Pin contact features the Eye of the Needle design (see next page). Individual contacts can be removed and replaced several times without affecting electrical or mechanical performance. These properties make the Eye of the Needle the preferred design in military and commercial applications.

### OUTLINE AND DIMENSIONS

**SEE DETAIL DRAWINGS ON FACING PAGE**

![Diagram of .100 Contact Centers](image)

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>15/30</td>
<td>1.400</td>
<td>1.604 (40.74)</td>
<td>1.760 (44.70)</td>
<td>1.544 (39.22)</td>
<td>1.624 (41.25)</td>
<td>1.488 (37.80)</td>
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<tr>
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<td>1.700</td>
<td>1.904 (48.36)</td>
<td>2.060 (52.32)</td>
<td>1.844 (46.84)</td>
<td>1.924 (49.67)</td>
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<td>22/44</td>
<td>2.100</td>
<td>2.304 (58.52)</td>
<td>2.460 (62.48)</td>
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<td>2.604 (66.14)</td>
<td>2.760 (71.10)</td>
<td>2.544 (65.62)</td>
<td>2.624 (66.65)</td>
<td>2.488 (63.20)</td>
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<tr>
<td>31/62</td>
<td>3.000</td>
<td>3.204 (81.38)</td>
<td>3.360 (85.34)</td>
<td>3.144 (79.86)</td>
<td>3.224 (81.89)</td>
<td>3.088 (78.44)</td>
</tr>
<tr>
<td>35/70</td>
<td>3.400</td>
<td>3.604 (89.50)</td>
<td>3.760 (93.50)</td>
<td>3.544 (89.02)</td>
<td>3.624 (91.95)</td>
<td>3.488 (88.60)</td>
</tr>
<tr>
<td>36/72</td>
<td>3.500</td>
<td>3.704 (94.08)</td>
<td>3.860 (98.04)</td>
<td>3.644 (92.56)</td>
<td>3.724 (95.59)</td>
<td>3.588 (91.14)</td>
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<tr>
<td>40/80</td>
<td>3.900</td>
<td>4.104 (104.24)</td>
<td>4.260 (108.20)</td>
<td>4.044 (102.72)</td>
<td>4.124 (104.75)</td>
<td>3.988 (101.30)</td>
</tr>
<tr>
<td>43/86</td>
<td>4.200</td>
<td>4.404 (111.86)</td>
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<td>6.044 (153.52)</td>
<td>6.124 (155.55)</td>
<td>5.988 (152.10)</td>
</tr>
</tbody>
</table>

**Note:** Dimensions are in inches and (millimeters). Tolerance ±.010 (.25) unless otherwise specified.
CPC, CPO, CPS Series
Compliant Pin Card-Edge Connectors

SPECIFICATIONS
ELECTRICAL
Current Rating: 3 amps
Dielectric Withstanding Voltage: 650 Vrms min.
Insulation Resistance: 5000 megohms min.
Contact Resistance: 10 milliohms at 3 amps
TEMPERATURE RANGE
-55°C to +105°C
(-67°F to +221°F)

MECHANICAL
Insertion Force:
6 to 10 oz. average per contact pair with .062” p.c. board
Withdrawal Force:
2 to 6 oz. average per contact pair with .062” p.c. board
Compliant Section
Insertion Force: 40 lbs. max. with .062” p.c. board
Withdrawal Force: 10 lbs. min. with .062” p.c. board

MATERIALS
INSULATOR:
Thermoplastic polyester, glass reinforced, UL94V-0 approved, color black.
CONTACTS:
Phosphor bronze, gold plated per MIL-G-45204, Type II, Grade C, over nickel.
Pre-loaded cantilever beam, "Eye Of The Needle" compliant section.
RECOMMENDED BOARD DIMENSIONS:
Mother board .062” to .135” thick
Unplated thru-hole diameter .0453 ± .001
Finished plated thru-hole diameter .040 ± .003

CONTACT TERMINATIONS
AND CARD SLOT

<table>
<thead>
<tr>
<th>CARD SLOT DEPTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>CODE</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>4</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>TERMINATION LENGTH</th>
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<tbody>
<tr>
<td>CODE</td>
</tr>
<tr>
<td>S2</td>
</tr>
<tr>
<td>W2</td>
</tr>
<tr>
<td>W4</td>
</tr>
</tbody>
</table>

COMPLIANT PIN:
EYE OF THE NEEDLE DESIGN
The Eye of the Needle contact design has been tested and accepted for all military and commercial applications.
When inserted into a .040” ± .003 thru-hole, the compliant section provides a gas tight connection without stressing the hole. It can be used effectively in .062”, .093” and .125” thick printed circuit boards.
Contacts can be individually replaced without removing the entire connector. The seven pound minimum retention force of each contact eliminates any need for hold-down hardware.

TOOLING
Viking offers two hand tools that allow the operator to easily remove and replace individual contacts. The connector installation tool varies with the number of positions of the connector. Please consult the factory for the tool part number corresponding to the selected connector size.

ORDERING INFORMATION

CONNECTOR STYLES
CPC: Low profile closed both ends
CPO: Low profile open both ends
CPS: Low profile open one end

NUMBER OF CONTACT PAIRS
15, 18, 22, 25, 31, 35, 36, 40, 43, 50, 60

CONTACT PLATING
CT: .000015 gold engagement area;
.000100 min. tin lead termination area
DT: .000030 gold engagement area;
.000100 min. tin lead termination area

INSULATOR MATERIAL
2: Polyester (black)

TAIL LENGTH
S2: .375(9.53)
W2: .702(17.83)
W4: .475(12.07)

CARD SLOT DEPTH
3: .350(8.89)
4: Available with low profile only.

SERIES IDENTIFIER
J: .100(2.54) Contact Centers
.062(1.57) p.c. board

Standard options are indicated by bold italic type.
Nonstandard items require a factory quotation for price and delivery.
Viking's HS, HC, and HO Series Compliant Pin Card-Edge Connectors, like our CPC, CPO and CPS Series are ideal for use with multilayer backplane assemblies. This series, however, has been designed for installation without use of special tooling, making installation in certain applications even faster and easier. These connectors also feature the Eye of the Needle contact design and both closed and open-end insulators suitable for stacking.

### Outline and Dimensions

**Code HS: Open One End**

**Code HC: Closed Both Ends**

**Code HC: Open Both Ends**

### Polarization

Between-Contacts
Polaring Key
Part No. 091-0071-000
See page 34 for further information.

<table>
<thead>
<tr>
<th>Contact Positions</th>
<th>A (±0.007)</th>
<th>B (±0.015)</th>
<th>C (±0.010)</th>
<th>D (±0.010)</th>
<th>E (±0.010)</th>
<th>F (±0.010)</th>
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<tbody>
<tr>
<td>15/30</td>
<td>1.400 (35.56)</td>
<td>1.600 (40.64)</td>
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<td>1.547 (39.29)</td>
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<td>1.700 (43.18)</td>
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<td>3.250 (85.09)</td>
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<td>5.700 (144.78)</td>
<td>5.850 (148.59)</td>
<td>5.647 (143.43)</td>
<td>5.722 (145.34)</td>
<td>5.594 (142.09)</td>
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<td>60/120</td>
<td>5.900 (149.86)</td>
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<td>6.047 (153.59)</td>
<td>6.122 (155.50)</td>
<td>5.994 (152.25)</td>
</tr>
</tbody>
</table>

Note: Dimensions are in inches and (millimeters). Tolerance ±0.010 (±.25) unless otherwise specified.
SPECIFICATIONS

ELECTRICAL
Current Rating: 3 amps
Dielectric Withstanding Voltage:
750 VAC min. at sea level
Insulation Resistance:
5000 megohms min. per MIL-STD-202
Contact Resistance:
10 milliohms max.

TEMPERATURE RANGE
-55°C to +105°C
(-67°F to +221°F)

THERMAL SHOCK
No damage or electrical degradation when tested per MIL-STD-202,
Method 107, Condition A.

MECHANICAL
Contact Insertion Force:
16 oz. max. per contact pair with a
.070 thick blade per MIL-C-21097
Contact Withdrawal Force:
1.0 oz. min. per contact pair with a
.054 thick blade per MIL-C-21097.
Compliant Section
Insertion Force:
40 lbs. max. per MIL-STD-2166
Compliant Pin
Withdrawal Force:
8 lbs. min. per MIL-STD-2166
Contact Retention: 1.0 lb. min.
Contact Normal Force:
3.0 oz. min. per contact

MATERIALS
INSULATOR:
Thermoplastic polyester, glass reinforced, UL94V-0 approved, color black.

CONTACTS:
Phosphor bronze, gold plated per MIL-G-45205, Type II, Grade C,
over nickel. Pre-loaded cantilever beam. "Eye Of The Needle" compliant section.

RECOMMENDED
BOARD DIMENSIONS:
Mother board .062" to .135" thick
Unplated thru-hole diameter .0453 ± .001
Finished plated thru-hole diameter .040 ± .003

CONTACT TERMINATIONS

| TERMINATION LENGTH | CODE | L
<table>
<thead>
<tr>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>CODE</td>
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<td>±0.015(0.38)</td>
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<tr>
<td>S1</td>
<td>.190(4.83)</td>
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<tr>
<td>S2</td>
<td>.375(9.57)</td>
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</tr>
<tr>
<td>W4</td>
<td>.475(12.07)</td>
<td></td>
</tr>
<tr>
<td>W1</td>
<td>.530(13.46)</td>
<td></td>
</tr>
<tr>
<td>W2</td>
<td>.702(17.83)</td>
<td></td>
</tr>
</tbody>
</table>

Note: for other tail lengths, please consult factory.

COMPLIANT PIN:
EYE OF THE NEEDLE DESIGN
The Eye of the Needle contact design has been tested and accepted for all
military and commercial applications. When inserted into a .040" ± .003"
through-hole, the compliant section provides a gas tight connection
without stressing the hole. It can be used effectively in .062", .093" and
.125" thick printed circuit boards.

ORDERING
INFORMATION

CONNECTOR STYLES
HS: Open one end
HC: Closed both ends
HO: Open both ends

NUMBER OF CONTACT PAIRS
15, 18, 25, 30, 31, 36, 39, 40,
43, 50, 55, 56, 60

CONTACT PLATING
CT: .000015 gold engagement area;
.000100 min. tin lead termination area
DT: .000030 gold engagement area;
.000100 min. tin lead termination area.
CD: .000030 gold engagement area;
.000015 min. selective gold termination area

INSULATOR MATERIAL
S: Polyester (black)

TAIL LENGTH
S1: .190(4.83)
S2: .375(9.53)
W4: .475(12.07)
W1: .530(13.46)
W2: .702(17.83)

CARD SLOT DEPTH
5: .515(13.08)

SERIES IDENTIFIER
J: .100(2.54) Contact Centers
.062(1.57) p.c. board

Standard options are indicated by **bold italic type**.
Nonstandard items require a factory quotation for price and delivery.
.125 Contact Centers (3.18 mm)
.125 x .145 grid

Available in all popular sizes from 10 to 50 positions, these low profile .125" contact center connectors accept 1/16" (.062") p.c. boards. Features include a choice of mounting styles, between-contact polarization, standoffs, and a chamfered lead-in guide for the mating p.c. board. The contacts are bifurcated, with dip solder or pierced eyelet terminations on .145" row spacing. The pierced eyelet type are individually replaceable using a simple hand tool.

OUTLINE AND DIMENSIONS

Contact Identification:
Numbers: 1, 2, 3, 22, 23, 44, 45, 50
Letters: A, B, C, Z, AA, AF
Omit: G, I, O, Q, g, i, o, q

Polarization
Between-Contacts
Polarizing Key
Part No. 091-0071-000
See page 34 for further information.

<table>
<thead>
<tr>
<th>CONTACT POSITIONS</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>E' FLOAT MTG</th>
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<tbody>
<tr>
<td>10/20</td>
<td>1.125 (28.56)</td>
<td>1.375 (34.92)</td>
<td>1.535 (38.99)</td>
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<td>2.055 (52.20)</td>
<td>2.118 (53.80)</td>
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<td>15/30</td>
<td>1.750 (44.45)</td>
<td>2.030 (50.80)</td>
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<td>2.420 (61.47)</td>
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<td>2.125 (53.98)</td>
<td>2.375 (60.32)</td>
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<td>2.795 (70.99)</td>
<td>3.055 (77.60)</td>
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<td>22/44</td>
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<td>3.035 (77.09)</td>
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<td>3.555 (90.30)</td>
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<td>28/56</td>
<td>3.375 (85.72)</td>
<td>3.625 (92.08)</td>
<td>3.785 (96.14)</td>
<td>4.045 (102.74)</td>
<td>4.305 (109.35)</td>
<td>4.369 (110.95)</td>
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<td>31/52</td>
<td>3.750 (95.25)</td>
<td>4.000 (101.60)</td>
<td>4.160 (105.66)</td>
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<td>4.680 (119.87)</td>
<td>4.743 (120.47)</td>
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<td>6.535 (165.99)</td>
<td>6.795 (172.99)</td>
<td>7.055 (179.20)</td>
<td>7.118 (180.80)</td>
</tr>
</tbody>
</table>

Note: Dimensions are in inches and (millimeters). Tolerance ±0.010 (0.25) unless otherwise specified.
### SPECIFICATIONS

**ELECTRICAL**
- Operating Voltage: 800 Vdc (sea level)
- Current Rating: 3 amp max.
- Dielectric Withstanding Voltage: 1500Vrms min.
- Insulation Resistance: 5000 megohms min.
- Voltage Drop: 30 mV max.

**TEMPERATURE RANGE**
- Dialylyl Phthalate & Phenolic:
  - -65°C to +125°C (-85°F to +257°F)
- Polyester:
  - -65°C to +105°C (-85°F to +221°F)

### MECHANICAL
- Contact Retention: 3 lbs. min.
- Insertion Force: 2 to 16 oz. per opposing contact pair when using .062 (1.57) steel test blade.
- Withdrawal Force: 1 oz. min. per opposing contact pair when using .054 (1.37) steel test blade.

**MATERIALS**
- **INSULATOR:**
  - Dialylyl Phthalate, per MIL-M-14, U.L. 94V-0 approved, color green
- Phenolic, glass reinforced per MIL-M-14, type MPH, U.L. 94V-0 approved, color black
- Thermoplastic Polyester, glass reinforced, U.L. 94V-0 approved, color black

**CONTACTS:**
- Copper alloy, gold plated per MIL-G-45204, Type II, Grade C, over nickel.

**INSERTS:**
- Stainless steel, passivated

**NOTE:** All tests are in accordance with requirements of MIL-C-21097

### CONTACT TERMINATIONS

**PIERCED EYELET**
- CODE: N

**DIP SOLDER**
- CODES: E, DD, V

**Note:** All dip solder terminations are .036 (91) dia. and fit .042 (1.07) min. dia. p.c. board hole.

### MOUNTING STYLES

**THREADED INSERT**
- CODE: 3

**THRU HOLE**
- CODE: 5

**FLOAT MOUNT**
- CODE: 8

**NO EARS**
- CODE: 12

### ORDERING INFORMATION

<table>
<thead>
<tr>
<th>C</th>
<th>N</th>
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<tr>
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<tr>
<td>/9</td>
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<td></td>
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</table>

### OPTIONS

**POLARIZATION:**
- 2: Between-Contacts

**CONTACT PLATING CODES:**
- **KH:** .000010 gold engagement and termination areas
- **KT:** .000010 gold engagement area; .000100 min. tin lead termination area
- **VH:** .000030 gold engagement and termination areas
- **VN:** .000030 gold engagement area; .000010 tin lead termination area
- **VT:** .000030 gold engagement area; .000100 min. lead termination area

**NUMBER OF CONTACT PAIRS:**
- 10, 15, 18, 22, 28, 31, 35, 36, 40, 50

**INSULATOR MATERIAL:**
- 1: Dialylyl Phthalate (green)
  - Standard with VH, VN, and VT platings
  - Not available with KT plating
- 2: Polyester (black)
  - Standard with KH, KT, VN, and VT platings
  - Not available with VH plating or Code N termination
- 9: Phenolic (black)
  - Standard with Code N termination

### MOUNTING STYLES IDENTIFIER:
- **C:** .125 (3.18) Contact Centers
- **.062 (1.57) P.C. Board**

Standard options are indicated by **bold italic type.**

Nonstandard items require a factory quotation for price and delivery.
.125 Contact Centers (3.18 mm)

The .125" contact center version of Viking's Wire Wrap® and round tail dip solder connectors offers all the benefits of the reliable semi-bellows contact design with the cost effective options of selective gold plating and thermoplastic insulators. These dual row connectors accept a 1/16" (.062") p.c. board and have a termination row spacing of .250". A wide range of sizes from 10 to 50 positions is available, together with various mounting options.

OUTLINE AND DIMENSIONS

Contact Identification:
Numbers: 1, 3, 5, ..., 99
2, 4, 6, ..., 100

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<th>B (±.007)</th>
<th>C (±.015)</th>
<th>D (±.010)</th>
<th>E (±.015)</th>
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<td>(155.58)</td>
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<td>(165.95)</td>
<td>(172.59)</td>
<td>(179.20)</td>
<td>(161.52)</td>
</tr>
</tbody>
</table>

Note: Dimensions are in inches and (millimeters). Tolerance ±.010 (.25) unless otherwise specified.
CND, CNK Series
Wire Wrap and Round Tail Dip Solder Terminations

SPECIFICATIONS

ELECTRICAL
- Operating Voltage: 800 Vdc (sea level)
- Current Rating: 3 amp max.
- Dielectric Withstanding Voltage: 1500 Vrms min.
- Insulation Resistance: 5000 megohms min.
- Voltage Drop: 30 mV max.

TEMPERATURE RANGE
- Diallyl Phthalate & Phenolic: -55°C to +125°C (-5°F to +257°F)
- Polyester: -55°C to +105°C (-67°F to +221°F)

MECHANICAL
- Contact Retention: Wrap Post: 8 lbs. min.; Dip Solder 3 lbs min.
- Insertion Force: 2 to 10 oz. per opposing contact pair when using .062 (1.57) steel test blade
- Withdrawal Force: 1 oz. min. per opposing contact pair when using .054 (1.37) steel test blade

MATERIALS
- INSULATOR: Diallyl Phthalate, per MIL-M-14, U.L. 94V-0 approved, color green
- Phenolic, glass reinforced per MIL-M-14, type MFH, U.L. 94V-0 approved, color black
- Thermoplastic Polyester, glass reinforced, U.L. 94V-0 approved, color black

CONTACTS:
- Copper alloy, gold plated per MIL-G-45204, Type II, Grade C, over nickel

INSERTS:
- Stainless steel, passivated

NOTE:
- All tests are in accordance with requirements of MIL-C-21097.

CONTACT TERMINATIONS

DIP SOLDER
- Dip Solder Terminations are .026 (.66) ± .002 (.05)
- Diameter fit .035 (.89)
- Minimum diameter p.c. board hole.

WRAP POST
- Wrap posts are .025 (.64) square.

CODE NK
CODE ND

MOUNTING STYLES

FLUSH MOUNT
- CODE 1

THREADED INSERT
- CODE 3

THRU HOLE
- CODE 5

NO EARS
- CODE 12

TRANSVERSE THRU HOLE
- CODE 15

ORDERING INFORMATION

POLARIZATION
- 3: Between-Contacts

CONTACT PLATING
- KH: 0.000010 gold engagement and termination area
- KT: 0.000010 gold engagement area; 0.000010 min. tin lead termination area
- VH: 0.000030 gold engagement and termination area
- VN: 0.000030 gold engagement area; 0.000010 min. tin lead termination area
- VT: 0.000030 gold engagement area; 0.000010 min. tin lead termination area

NUMBER OF CONTACT PAIRS
- 10, 14, 15, 18, 22, 28, 30, 31, 35, 36, 40, 44, 50

INSULATOR MATERIAL
- 1: Diallyl Phthalate (green);
- Standard with VH, VN, and VT platings
- Not available with KT plating
- 2: Polyester (black);
- Standard with KH, KT, VN, and VT platings
- Not available with VH plating
- 3: Phenolic (black);
- Not available with KT plating

3 VN 50 /1 C ND 5 [ ]

TERMINATION MODIFIERS
- (085), (095) Right Angle Termination Modifiers
(See page 21 for details.)

MOUNTING STYLES
- 1: Flush Mount:
- Standard with NK termination only
- 3: Threaded Insert
- 5: Thru Hole
- 12: No Ears:
- Standard with NK termination only
- 15: Transverse Thru Hole

CONTACT TERMINATIONS
- ND: Wrap Post
- NK: Dip solder

SERIES IDENTIFIER
- C: .125 (3.18) Contact Centers .062 (1.57) P.C. Board.

Standard options are indicated by bold italic type.
Nonstandard items require a factory quotation for price and delivery.
Viking is offering a variety of right angle termination modifications on its popular JND and CND Series. These connector series utilize the reliable and cost-effective semi-bellows contact with right angle bend .025 square contact tails. There is a wide variety of right angle versions available together with various mounting styles. In addition, the JND Series offers a card-extender termination option.

NOTE: Contacts are .025 square. For additional insulator dimensions see JND Series (page 9) and CND Series (page 19).

**CONTACT TERMINATIONS**

**.100 CENTERS (2.54MM) JND SERIES**

- **CODE 104**
- **CODE 095**
- **CODE 105**

- **CODE 083**

- **CARD EXTENDER CODE 100**

**.125 CENTERS (3.18MM) CND SERIES**

- **CODE 095**
- **CODE 083**

**Note:** Dimensions are in inches and (millimeters). Tolerance ±0.010 (.25) unless otherwise specified.
This dual readout, 105 position connector on .150" contact centers is particularly suited for use on burn-in systems. For this reason a high temperature dialyl phthalate insulator with beryllium copper contacts is used. Either pierced eyelet or dip solder termination types are offered, the pierced eyelets being individually replaceable. The insulator has four molded-in barriers positioned at 3.00" and 6.00" from each end of the card slot.

**OUTLINE AND DIMENSIONS**

**Polarization**

In-Contact
Polarizing Key (copper)
Part No. 091-0020-012
To use this polarizing key you must remove contacts.
See page 34 for further information.

**CONTACT TERMINATIONS**

Dip solder terminations are .045 (1.14) diameter and fit .051 (1.29) min. dia. p.c. board hole.

DIP SOLDER

CODE V

Pierced Eyelet

CODE N

**MOUNTING STYLE**

Thru Hole

CODE 5

**SPECIFICATIONS**

**ELECTRICAL**

Operating Voltage:
1500 Vdc (sea level)

Current Rating: 5 amp max

Dielectric Withstanding Voltage:
1800 Vrms min.

Insulation Resistance:
5000 megohms min.

Voltage Drop:
30 mV max.

**MECHANICAL**

Contact Retention:
3 lbs. min.

Insertion Force:
2 to 16 oz. per opposing contact pair when using .062 (1.57) steel test blade.

Withdrawal Force:
1 oz. min. per opposing contact pair when using .054 (1.37) steel test blade.

**MATERIALS**

**INSULATOR:**
Dialyl Phthalate, high temperature per MIL-M-14, U.L. 94V-0 approved, color brown

**ORDERING INFORMATION**

<table>
<thead>
<tr>
<th>SERIES</th>
<th>PART NUMBER TO ORDER</th>
</tr>
</thead>
<tbody>
<tr>
<td>HN with Pierced Eyelet Termination</td>
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</tr>
<tr>
<td>HV with Dip Solder Termination</td>
<td>VH105/7HV5</td>
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</table>

Dimensions are in inches and (millimeters). Tolerance ± .010(25) unless otherwise specified.
The HNG Series is a dual-readout, .150" contact center Wire Wrap® connector with .045" square posts. The row spacing is .200". The bifurcated, cantilever beam contacts are individually replaceable. The connectors will accept p.c. boards between .054" and .071" thick. The insulator body is molded in thermoset materials. A choice of thru hole or threaded insert mounting styles is offered. Polarization is between contacts.

**OUTLINE AND DIMENSIONS**

![Diagram of connector and dimensions]

**POLARIZATION**

Between-Contacts

Polarizing Key

Part No. 691-0024-000

See page 34 for further information.

**CONTACT IDENTIFICATION**

- Numbers: 1, 2, 3, 22, 23, 43
- Letters: A, B, C, Z, a, y
- Omit: G, I, O, Q, g, i, o, q

<table>
<thead>
<tr>
<th>CONTACT POSITIONS</th>
<th>A (±0.007)</th>
<th>B (±0.007)</th>
<th>C (±0.015)</th>
<th>D (±0.010)</th>
<th>E (±0.015)</th>
<th>F (±0.015)</th>
</tr>
</thead>
<tbody>
<tr>
<td>18/36</td>
<td>2.550 (64.77)</td>
<td>2.650 (72.39)</td>
<td>2.968 (75.90)</td>
<td>3.301 (83.85)</td>
<td>3.551 (90.20)</td>
<td>2.800 (71.12)</td>
</tr>
<tr>
<td>28/55</td>
<td>4.050 (102.87)</td>
<td>4.350 (110.49)</td>
<td>4.488 (114.00)</td>
<td>4.801 (121.55)</td>
<td>5.051 (128.30)</td>
<td>4.300 (109.22)</td>
</tr>
<tr>
<td>31/62</td>
<td>4.500 (114.30)</td>
<td>4.800 (121.92)</td>
<td>4.928 (125.43)</td>
<td>5.251 (133.08)</td>
<td>5.501 (139.73)</td>
<td>4.750 (120.66)</td>
</tr>
<tr>
<td>43/85</td>
<td>6.300 (160.02)</td>
<td>6.600 (167.64)</td>
<td>6.756 (171.15)</td>
<td>7.051 (179.10)</td>
<td>7.301 (185.45)</td>
<td>6.550 (166.37)</td>
</tr>
</tbody>
</table>

**Note:** Dimensions are in inches and (millimeters). Tolerance ±0.010 (25) unless otherwise specified.
SPECIFICATIONS

**ELECTRICAL**
- Operating Voltage: 1500 Vdc (sea level)
- Current Rating: 5 amp max.
- Dielectric Withstanding Voltage: 1800Vrms min.
- Insulation Resistance: 5000 megohms min.
- Voltage Drop: 30 mV max.

**TEMPERATURE RANGE**
- -65° C to +125° C
- (-65° F to +257° F)

**MECHANICAL**
- Contact Retention: 8 lbs. min.
- Insertion Force: 2 to 16 oz. per opposing contact pair when using .062 (.157) steel test blade.
- Withdrawal Force: 1 oz. min. per opposing contact pair when using .054 (.137) steel test blade.

**MATERIALS**
- **INSULATOR:** Diallyl Phthalate, per MIL-M-14, U.L. 94V-0 approved, color green
- **CONTACTS:** Phenolic, glass reinforced per MIL-M-14, type MFH, U.L. 94V-0 approved, color black
- **CONTACTS:** Copper alloy, gold plated per MIL-G-45204, Type II, Grade C, over nickel.
- **INSERTS:** Stainless steel, passivated

**CONTACT TERMINATIONS**

Note:
Wrap posts are .045 (.114) square.

**MOUNTING STYLES**

**ORDERING INFORMATION**

<table>
<thead>
<tr>
<th>POLARIZATION</th>
<th>CONTACT PLATING</th>
<th>NUMBER OF CONTACT PAIRS</th>
<th>INSULATOR MATERIAL</th>
<th>SERIES IDENTIFIER</th>
<th>CONTACT TERMINATIONS</th>
<th>MOUNTING STYLES</th>
</tr>
</thead>
<tbody>
<tr>
<td>2: Between-Contacts</td>
<td>VH: .000030 gold all over</td>
<td>18, 28, 31, 43</td>
<td>1: Diallyl Phthalate (green)</td>
<td>H: .150 (3.81) Contact Centers; .062 (1.57) P.C. Board</td>
<td>NG: Wrap Post</td>
<td>3: Threaded Insert</td>
</tr>
<tr>
<td></td>
<td>VN: .000030 gold engagement area</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5: Thru Hole</td>
</tr>
<tr>
<td></td>
<td>.000010 gold termination area</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This series is nonstandard and requires a factory quotation for price and delivery.
Viking's full-bellows contact withstands repeated insertion and withdrawal of the mating p.c. board. Either pierced eyelet or dip solder terminations are available, with a .145" row spacing. Pierced eyelet contacts accommodate three #22 AWG wires and are replaceable using a simple hand tool. The low profile connector bodies feature between-contacts polarization, thermoset or thermoplastic materials, and a variety of mounting styles.

### OUTLINE AND DIMENSIONS

Contact Identification for
6 thru 22 positions:
Numbers: 1, 2, 3, ..., 22
Letters: A, B, C, ..., Z
Omit: G, I, O, Q

Contact Identification for
36 thru 43 positions:
Letters: A, B, C, ..., Z, A', ..., Y
Omit: G, I, O, Q, G, I, O, Q

### POLARIZATION

Between-Contacts Polarizing Key
Part No. 091-0024-000

See page 34 for further information.

<table>
<thead>
<tr>
<th>CONTACT POSITIONS</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>E' FLOAT MTG ONLY</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>±.005</td>
<td>±.007</td>
<td>±.010</td>
<td>±.005</td>
<td>±.015</td>
<td>±.015</td>
<td>±.005</td>
</tr>
<tr>
<td></td>
<td>(.13)</td>
<td>(.18)</td>
<td>(.25)</td>
<td>(.13)</td>
<td>(.38)</td>
<td>(.38)</td>
<td>(.13)</td>
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<tr>
<td>6/12</td>
<td>.760</td>
<td>1.080</td>
<td>1.220</td>
<td>1.533</td>
<td>1.783</td>
<td>1.846</td>
<td>.330</td>
</tr>
<tr>
<td></td>
<td>(19.81)</td>
<td>(27.43)</td>
<td>(30.99)</td>
<td>(38.94)</td>
<td>(45.29)</td>
<td>(46.89)</td>
<td>(8.38)</td>
</tr>
<tr>
<td>10/20</td>
<td>1.404</td>
<td>1.704</td>
<td>1.844</td>
<td>2.157</td>
<td>2.407</td>
<td>2.470</td>
<td>.330</td>
</tr>
<tr>
<td></td>
<td>(35.68)</td>
<td>(43.26)</td>
<td>(46.84)</td>
<td>(54.79)</td>
<td>(61.14)</td>
<td>(62.74)</td>
<td>(8.38)</td>
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<tr>
<td>15/30</td>
<td>2.184</td>
<td>2.484</td>
<td>2.624</td>
<td>2.937</td>
<td>3.187</td>
<td>3.250</td>
<td>.330</td>
</tr>
<tr>
<td></td>
<td>(55.47)</td>
<td>(63.09)</td>
<td>(66.65)</td>
<td>(74.60)</td>
<td>(80.95)</td>
<td>(82.55)</td>
<td>(8.38)</td>
</tr>
<tr>
<td>18/36</td>
<td>2.652</td>
<td>2.952</td>
<td>3.092</td>
<td>3.405</td>
<td>3.655</td>
<td>3.718</td>
<td>.330</td>
</tr>
<tr>
<td></td>
<td>(67.36)</td>
<td>(74.98)</td>
<td>(78.54)</td>
<td>(86.49)</td>
<td>(92.84)</td>
<td>(94.44)</td>
<td>(8.38)</td>
</tr>
<tr>
<td></td>
<td>(83.21)</td>
<td>(90.83)</td>
<td>(94.39)</td>
<td>(102.34)</td>
<td>(108.71)</td>
<td>(110.29)</td>
<td>(8.38)</td>
</tr>
<tr>
<td></td>
<td>(138.68)</td>
<td>(146.30)</td>
<td>(149.86)</td>
<td>(157.81)</td>
<td>(164.15)</td>
<td>(165.76)</td>
<td>(11.13)</td>
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<tr>
<td></td>
<td>(166.42)</td>
<td>(172.77)</td>
<td>(177.60)</td>
<td>(185.55)</td>
<td>(191.90)</td>
<td>(193.50)</td>
<td>(12.70)</td>
</tr>
</tbody>
</table>

Note: Dimensions are in inches and (millimeters). Tolerance ±.010(.25) unless otherwise specified.
ADD, AE, AKC, AN, AV Series
Dip Solder and Pierced Eyelet Terminations

SPECIFICATIONS

ELECTRICAL
- Operating Voltage: 1800 Vdc (sea level)
- Current Rating: 5 amp max.
- Dielectric Withstanding Voltage: 1600 Vrms min.
- Insulation Resistance: 5000 megohms min.
- Voltage Drop: 30 mV max.

TEMPERATURE RANGE
- Diethyl Phthalate & Phenolic: -65°C to +125°C (-67°F to +257°F)
- Polyester: -55°C to +105°C (-67°F to +221°F)

MECHANICAL
- Contact Retention: 3 lbs. min.
- Insertion Force: 2 to 16 oz. per opposing contact pair when using .062 (1.57) steel test blade
- Withdrawal Force: 1 oz. min. per opposing contact pair when using .054 (1.37) steel test blade

MATERIALS
- INSULATOR: Diethyl Phthalate, per MIL-M-14, U.L. 94V-0 approved, color green
- PHENOLIC: Glass reinforced phenolic, type MFH, U.L. 94V-0 approved, color black
- THERMOPLASTIC POLYESTER: Glass reinforced, U.L. 94V-0 approved, color black

CONTACTS:
- Copper alloy, gold plated per MIL-G-45204, Type II, Grade C, over nickel

INSERTS:
- Stainless steel, passivated

NOTE:
- All tests are in accordance with requirements of MIL-C-21097.

CONTACT TERMINATIONS

NOTE:
- All Dip Solder Terminations are 0.45
  (1.14) diameter and fit 0.51 (1.29)
  minimum diameter board hole.

DIP SOLDER CODES E, DD, V

<table>
<thead>
<tr>
<th>CODE</th>
<th>DIMENSION</th>
</tr>
</thead>
<tbody>
<tr>
<td>E</td>
<td>.122 x .025 (3.09 x .64)</td>
</tr>
<tr>
<td>DD</td>
<td>.195 x .025 (5.35 x .64)</td>
</tr>
<tr>
<td>V</td>
<td>.300 x .025 (7.65 x .64)</td>
</tr>
</tbody>
</table>

PIERCED EYELET CODE N

[Diagram showing acceptor holes and identification rows]

RIGHT ANGLE DIP SOLDER CODE KC

MOUNTING STYLES

THREADED INSERT CODE 3

THRU HOLE CODE 5

FLOAT MOUNT CODE 8

NO EARS CODE 12

TRANSVERSE THRU HOLE CODE 15

ORDERING INFORMATION

2 KT 43 /2 A DD 5

POLARIZATION
- 2: Between-Contacts (Slotted)

CONTACT PLATING
- KH*: .000010 gold engagement and termination areas
- KT*: .000010 gold engagement area; .000010 min. tin lead termination area
- VH: .000030 gold engagement and termination areas
- VN*: .000030 gold engagement area; .000030 tin lead termination area
- VT*: .000030 gold engagement area; .000030 tin lead termination area

*Not available on codes E and KC terminations.

NUMBER OF CONTACT PAIRS
- 6, 10, 15, 18, 22, 36, 43

INSULATOR MATERIAL
- 1: Dialllyl Phthalate (green): Standard with VH, VN, and VT platings
  Not available with KT or KH plating
- 2: Polyester (black): Standard with KH, KT, VN, and VT platings
  Not available with VH plating N terminations
- 9: Phenolic (black): Not available with KT plating
  Standard with code N termination

SERIES IDENTIFIER
- A: .156 (3.96) Contact Centers; .062 (1.57) P.C. Board

MOUNTING STYLES
- 3: Threaded Insert
- 5: Thru Hole
- 8: Floating Mount
- 12: No Ears
- 15: Thru Hole Side Mount

CONTACT TERMINATIONS
- N: Pierced Eyelet
- E: Short Dip Solder
- DD: Medium Dip Solder
- V: Long Dip Solder
- KC: Right-Angle Dip Solder

Standard options are indicated by bold italic type.
Nonstandard items require a factory quotation for price and delivery.
The popular 43 position connector used in Intel Multibus® I systems is included in the AMK Series. This round tail dip solder connector has the reliable and cost effective semi-bellows contact. The insulator body includes standoffs to facilitate cleaning after soldering. A 3 level Wire Wrap® termination is also available in the AMD Series. The AND Series is of identical design and construction with the exceptions that there are no standoffs and the card slot is smaller by .018".

**OUTLINE AND DIMENSIONS**

Contact Identification for 22 thru 31 sizes AND:
- Numbers: 1, 2, 3, ..., 22, 23, ..., 31
- Omit: G, I, O, Q, G, I

Contact Identification for 36 thru 43 size AND:
- Numbers: 1, 2, 3, ..., 22, 23, ..., 43
- Omit: G, I, O, Q, G, I, O

Contact Identification for 22 thru 43 size AMD, AMK:
- Numbers: 1, 3, 5, ..., 85
- 2, 4, 6, ..., 96

**Polarization**

Between-Contacts Polarizing Key
Part No. 091-0024-000
See page 34 for further information.

**AMD, AMK Series**

<table>
<thead>
<tr>
<th>CONTACT POSITIONS</th>
<th>A (BSC)</th>
<th>B ±0.007 (±.18)</th>
<th>C ±0.015 (±.38)</th>
<th>D ±0.010 (±.25)</th>
<th>E ±0.015 (±.38)</th>
<th>F ±0.015 (±.38)</th>
</tr>
</thead>
<tbody>
<tr>
<td>22/44</td>
<td>3.276 (83.21)</td>
<td>3.596 (91.34)</td>
<td>3.748 (95.20)</td>
<td>4.030 (102.36)</td>
<td>4.438 (110.44)</td>
<td>3.488 (88.60)</td>
</tr>
<tr>
<td>28/56</td>
<td>4.212 (106.98)</td>
<td>4.532 (115.11)</td>
<td>4.864 (118.97)</td>
<td>4.966 (126.14)</td>
<td>5.284 (134.21)</td>
<td>4.424 (112.37)</td>
</tr>
<tr>
<td>36/72</td>
<td>5.460 (138.68)</td>
<td>5.780 (146.81)</td>
<td>5.932 (150.67)</td>
<td>6.214 (157.84)</td>
<td>6.532 (165.91)</td>
<td>5.672 (144.07)</td>
</tr>
<tr>
<td>43/86</td>
<td>6.552 (166.42)</td>
<td>6.872 (174.55)</td>
<td>7.024 (180.41)</td>
<td>7.306 (185.57)</td>
<td>7.624 (193.65)</td>
<td>6.764 (171.81)</td>
</tr>
</tbody>
</table>

**AND Series**

<table>
<thead>
<tr>
<th>CONTACT POSITIONS</th>
<th>A (BSC)</th>
<th>B ±0.007 (±.18)</th>
<th>C ±0.015 (±.38)</th>
<th>D ±0.010 (±.25)</th>
<th>E ±0.015 (±.38)</th>
<th>F ±0.015 (±.38)</th>
</tr>
</thead>
<tbody>
<tr>
<td>22/44</td>
<td>3.276 (83.21)</td>
<td>3.578 (90.88)</td>
<td>3.717 (94.41)</td>
<td>4.030 (102.36)</td>
<td>4.260 (108.71)</td>
<td>3.526 (89.56)</td>
</tr>
<tr>
<td>28/56</td>
<td>4.212 (106.98)</td>
<td>4.514 (114.66)</td>
<td>4.653 (118.19)</td>
<td>4.966 (126.14)</td>
<td>5.216 (132.49)</td>
<td>4.462 (113.33)</td>
</tr>
<tr>
<td>36/72</td>
<td>5.460 (138.68)</td>
<td>5.762 (146.35)</td>
<td>5.901 (150.89)</td>
<td>6.214 (157.84)</td>
<td>6.464 (164.19)</td>
<td>5.710 (145.03)</td>
</tr>
<tr>
<td>43/86</td>
<td>6.552 (166.42)</td>
<td>6.854 (174.09)</td>
<td>6.993 (177.62)</td>
<td>7.306 (185.57)</td>
<td>7.556 (191.92)</td>
<td>6.802 (172.77)</td>
</tr>
</tbody>
</table>

*Note: Dimensions are in inches and (millimeters). Tolerance ±0.010,25 unless otherwise specified.*
SPECIFICATIONS

ELECTRICAL
- Operating Voltage: 1800 Vdc (sea level)
- Current Rating: 3 amp max
- Dielectric Withstanding Voltage: 1500 Vrms min.
- Insulation Resistance: 5000 megohms min.
- Voltage Drop: 30 mV max.

TEMPERATURE RANGE
- Dialyl Phthalate & Phenolic: -55°C to +125°C (-65°F to +257°F)
- Polyester: -65°C to +105°C (-85°F to +221°F)

MECHANICAL
- Contact Retention: Wire Wrap® 8 lbs. min.; Dip Solder 3 lbs. min.
- Insertion Force: 2 to 10 oz. per opposing contact pair when using .062 (1.57) steel test blade
- Withdrawal Force: 1 oz. min. per opposing contact pair using .054 (1.37) steel test blade

MATERIALS
- INSULATOR: Dialyl Phthalate, per MIL-M-14, U.L. 94V-0 approved, color green
- Phenolic, glass reinforced per MIL-M-14, type MFH, U.L. 94V-0 approved, color black
- Thermoplastic Polyester, glass reinforced, U.L. 94V-0 approved, color black

CONTACTS:
- Copper alloy, gold plated per MIL-G-45204, Type II, Grade C, over nickel

INSERTS:
- Stainless steel, passivated

NOTE:
- All tests are in accordance with requirements of MIL-C-21097.

CONTACT TERMINATIONS

DIP SOLDER
- CODE MK
- "G" DIMENSIONS
  - Sid.: 0.200 ± 0.025
  - Mod Code: 0.165 ± 0.025
  - [081]

WRAP POST
- Wrap posts are 0.020 square
- [086] .020 TYR
  - .020 TYR (.64)

MOUNTING STYLES

- FLUSH MOUNT
  - CODE 1
- THREADED INSERT
  - CODE 3
- THRU HOLE
  - CODE 5
- NO EARS
  - CODE 12

ORDERING INFORMATION

POLARIZATION
- 2: Between-Contacts

CONTACT PLATING
- KH: 0.000010 gold engagement and termination area
- KT: 0.000010 gold engagement area; .000100 min. tin lead termination area
- VH: 0.000030 gold engagement area and termination area
- VN: 0.000030 gold engagement area; .000100 min. tin lead termination area
- VT: 0.000030 gold engagement area; .000100 min. tin lead termination area

NUMBER OF CONTACT PAIRS
- 22, 28, 36, 43

INSULATOR MATERIAL
- 1: Dialyl Phthalate (green);
  - Standard with VH, VN, and VT platings
  - Not available with KT plating
- 2: Polyester (black);
  - Standard with KH, KT, VN, and VT platings
  - Not available with VH plating
- 9: Phenolic (black); Not available with KT plating

TERMINATION MODIFIER
- (081): Dip Solder .165 tail length

MOUNTING STYLES
- 1: Flush Mount;
  - Standard with MK termination only
- 3: Threaded Insert
- 5: Thru Hole
- 12: No Ears;
  - Standard with MK termination, 43 position only

CONTACT TERMINATIONS
- MD: Wrap Post (Standoff)
- ND: Wrap Post
- MK: Dip solder

SERIES IDENTIFIER
- A: 0.156 (3.96) Contact Centers
- .062 (1.57) P.C. Board.

Standard options are indicated by **bold italic type**.
Nonstandard items require a factory quotation for price and delivery.
These two-piece stacking connectors have been particularly designed for I/O expansion between a motherboard and a parallel mounted expansion card. IEEE specification P959 (based on Intel's ISB® bus) describes an example system, which provides an easy low-cost method of adding a variety of special functions to a basic board. The shrouded, self-locking design of the connector provides full mechanical support to small expansion modules. Three sizes are available and system versatility is further increased by the unique concept of the "bridge" connector. The "bridge" feature allows a smaller plug to be mated to a larger receptacle. For example, an 8 bit expansion module with a 36 contact plug can be mated with a 16 bit motherboard having a 44 contact receptacle. Both 36 and 44 contact plugs will mate with the 60 contact receptacle. The advanced contact design gives an excellent electrical interface in microprocessor applications at low voltages, low currents, and high frequencies.

### PLUG

![Diagram of PLUG](image)

#### ORDERING INFORMATION

<table>
<thead>
<tr>
<th>CONTACT POSITIONS</th>
<th>A BSC</th>
<th>B ±.010 (±.25)</th>
<th>PART NUMBERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>DUAL 18: 36 CONTACTS</td>
<td>1.700 (43.18)</td>
<td>2.025 (51.44)</td>
<td>VSRO1VT18A01</td>
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<td>DUAL 22 BRIDGE: 44 CONTACTS</td>
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<td>2.625 (66.68)</td>
<td>VSRO1VT22A01</td>
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<tr>
<td>DUAL 30 BRIDGE: 60 CONTACTS</td>
<td>3.300 (83.82)</td>
<td>3.625 (92.10)</td>
<td>VSRO1VT30A01</td>
</tr>
</tbody>
</table>

### RECEPTACLE

![Diagram of RECEPTACLE](image)

#### ORDERING INFORMATION

<table>
<thead>
<tr>
<th>CONTACT POSITIONS</th>
<th>A BSC</th>
<th>B ±.010 (±.25)</th>
<th>PART NUMBERS</th>
<th>PART NUMBERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>DUAL 18: 36 CONTACTS</td>
<td>1.700 (43.18)</td>
<td>2.025 (51.44)</td>
<td>VSRO1VT18B01</td>
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</tr>
<tr>
<td>DUAL 22 BRIDGE: 44 CONTACTS</td>
<td>2.300 (58.42)</td>
<td>2.625 (66.68)</td>
<td>VSRO1VT22B01</td>
<td></td>
</tr>
<tr>
<td>DUAL 30 BRIDGE: 60 CONTACTS</td>
<td>3.300 (83.82)</td>
<td>3.625 (92.10)</td>
<td>VSRO1VT30B01</td>
<td></td>
</tr>
</tbody>
</table>

*Note: Dimensions are in inches and (millimeters). Tolerance ±.010(.25) unless otherwise specified.*
**SPECIFICATIONS**

**ELECTRICAL**
- Current Rating: 3 amp max.
- Dielectric Withstanding Voltage: 1000Vrms min.
- Insulation Resistance: 1000 megohms min.
- Contact Resistance: 10 milliohms max.

**TEMPERATURE RANGE**
- -55°C to +125°C
  (-67°F to +257°F)

**MECHANICAL**
- Durability, Mating and Unmating: 200 cycles min.
- Mating Force Per Contact: 10 oz. max.
- Unmating Force Per Contact: 1 oz. min.
- Contact Retention: 3 lbs. min.

**CONTACTS**
- Insulator: Copper alloy
- Contact Finish: .000030 gold engagement area; .000100 min. tin lead termination area

**NOTE:** VSBX I Series is not intermateable with VSBX II Series (See next page)

**CONTACT TERMINATIONS**

**PLUG**
- Note: Terminations fit .038 (.97) ± .003 (.08) dia. P.C. board hole.

**RECEPTACLE**
- NOTE: Receptacle terminations fit .041 (1.04) ± .003 (.08) dia. p.c. board hole.

**MOUNTING STYLES**

**APPLICATION**
With these two-piece stacking connectors, basic mother boards can be customized by simply connecting small personality boards that offer nonstandard functions.

**VERSATILITY**
Smaller plugs mate with larger receptacles. For example, an 8 bit module with a 36 contact plug will mate with the 44 contact receptacle on a 16 bit mother board. Both 36 and 44 contact plugs mate with 60 position receptacles.

**MATERIALS**
- Insulator: Nylon, glass reinforced, U.L. 94V-0 approved, color blue

**CONTACT TERMINATIONS**

**PLUG**
- Terminations fit .038 (.97) ± .003 (.08) dia. P.C. board hole.

**RECEPTACLE**
- Terminations fit .041 (1.04) ± .003 (.08) dia. p.c. board hole.

**MOUNTING STYLES**

**APPLICATION**
With these two-piece stacking connectors, basic mother boards can be customized by simply connecting small personality boards that offer nonstandard functions.

**VERSATILITY**
Smaller plugs mate with larger receptacles. For example, an 8 bit module with a 36 contact plug will mate with the 44 contact receptacle on a 16 bit mother board. Both 36 and 44 contact plugs mate with 60 position receptacles.
The VSBX II line of two-piece connectors is designed to meet today's packaging requirements for high-density, reliable interconnections in conditions of low currents, low voltages, and high frequencies. Both parallel and perpendicular mounting options are available. When used as a stacking connector, the VSBX design gives a board separation of only 0.5". A right-angle dip solder option on the plug half allows a perpendicular mounting configuration between mother and daughter boards.

**CONTACT POSITIONS**

<table>
<thead>
<tr>
<th>CONTACT POSITIONS</th>
<th>A BSC</th>
<th>B ±.010</th>
</tr>
</thead>
<tbody>
<tr>
<td>5/10</td>
<td>.400</td>
<td>.725</td>
</tr>
<tr>
<td>8/16</td>
<td>.700</td>
<td>1.025</td>
</tr>
<tr>
<td>10/20</td>
<td>.900</td>
<td>1.225</td>
</tr>
<tr>
<td>12/24</td>
<td>1.100</td>
<td>1.425</td>
</tr>
<tr>
<td>15/30</td>
<td>1.400</td>
<td>1.725</td>
</tr>
<tr>
<td>18/36</td>
<td>1.700</td>
<td>2.025</td>
</tr>
<tr>
<td>20/40</td>
<td>1.900</td>
<td>2.225</td>
</tr>
<tr>
<td>22/44</td>
<td>2.100</td>
<td>2.425</td>
</tr>
<tr>
<td>28/56</td>
<td>2.700</td>
<td>3.025</td>
</tr>
<tr>
<td>50/100</td>
<td>4.900</td>
<td>5.225</td>
</tr>
</tbody>
</table>

Note: Dimensions are in inches and (millimeters). Tolerance ±.010(.25) unless otherwise specified.
**SPECIFICATIONS**

**ELECTRICAL**
- Current Rating: 3 amp max.
- Dielectric Withstanding Voltage: 1000 Vrms min.
- Insulation Resistance: 1000 megohms min.
- Contact Resistance: 10 milliohms max.

**MECHANICAL**
- Durability, Mating and Unmating: 200 cycles min.
- Mating Force Per Contact: 10 oz. max.
- Unmating Force Per Contact: 1 oz. max.
- Contact Retention: Codes F and H: 3 lbs. min.
  Code G: 6 lbs. min.

**TEMPERATURE RANGE**
- -55°C to +125°C
  (-67°F to +257°F)

**MATERIALS**
- **INSULATOR:** Nylon, glass reinforced, U.L. 94V-0 approved, color blue
- **CONTACTS:** Copper alloy

**NOTE:** VSBX II Series is not intermateable with VSBX I Series.

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**CONTACT TERMINATIONS**

**PLUG**
- Note: All plug terminations fit .038 (.97) ± .003(.08) dia. P.C. board hole.

**RECEPTACLE**
- Note: Receptacle terminations fit .041 (1.04) ± .003 (.08) dia. P.C. board hole.

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**ORDERING INFORMATION**

**SERIES IDENTIFIER**
- **LM:** VSBX II Series

**PART IDENTIFIER**
- **P:** Plug
- **R:** Receptacle

**INSULATOR MATERIAL**
- **01:** Nylon (blue)

**CONTACT PLATING**
- **VN:** .000030 gold engagement area; .000010 gold termination area. Plug only.
- **VT:** .000030 gold engagement area; .000100 min. tin lead termination area.
  Not standard on contact termination Codes G and H.

**NUMBER OF CONTACT PAIRS**
- 5, 8, 10, 12, 15, 18, 20, 22, 26, 50

**CONTACT TERMINATIONS**
- **F:** Dip Solder
- **G:** Wrap Post - Not available on Receptacle
- **H:** Right Angle Dip Solder - Not available on Receptacle

**LOCKING STYLES**
- **01:** Locking available on 22, 28, 50 position only.
- **04:** No Locking - Available on 5 through 20 position only.

Standard options are indicated by **bold italic type**. Nonstandard items require a factory quotation for price and delivery.
Hoods with Cable Clamp

Hoods are available for most Viking card-edge connectors with style 5 mounts and suitable contact termination lengths. They are molded in thermoplastic and feature an integral cable clamp for a right-angle cable outlet. The cable clamp has a screw adjustment and accommodates cable sizes from 3/16" (4.76) diameter to 3/8" (9.52) diameter.

A hood assembly consists of two main parts, one of which "telescopes" into the other, thus fitting various lengths of connectors. Three different widths (Dim. "A") are available to suit the various connector series. The provided. Consult the table to find the correct hood part number for your connector series and size.

**OUTLINE AND DIMENSIONS**

![Diagram of hood assembly](image)

**SECTION X-X**

<table>
<thead>
<tr>
<th>Connector Series</th>
<th>Dim. A</th>
<th>Contacts Per Row</th>
<th>Hood Assembly Part No.</th>
<th>Contacts Per Row</th>
<th>Hood Assembly Part No.</th>
<th>Contacts Per Row</th>
<th>Hood Assembly Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>LV, LZ</td>
<td>.330</td>
<td>25-30</td>
<td>036-0097-004</td>
<td>40</td>
<td>036-0097-003</td>
<td>64</td>
<td>036-0097-002</td>
</tr>
<tr>
<td>JND, JNK</td>
<td>.375</td>
<td>15-25</td>
<td>036-0098-003</td>
<td>28-36</td>
<td>036-0096-002</td>
<td>40-50</td>
<td>036-0098-001</td>
</tr>
<tr>
<td>CDD, CE, CN, CV</td>
<td>.330</td>
<td>10-18</td>
<td>036-0097-003</td>
<td>22-28</td>
<td>036-0097-002</td>
<td>31-50</td>
<td>036-0097-001</td>
</tr>
<tr>
<td>CND, CNK</td>
<td>.375</td>
<td>10-18</td>
<td>036-0098-003</td>
<td>22-30</td>
<td>036-0096-002</td>
<td>31-50</td>
<td>036-0098-001</td>
</tr>
<tr>
<td>HNG</td>
<td>.400</td>
<td>18</td>
<td>036-0099-002</td>
<td>28-31</td>
<td>036-0096-001</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AB, ADD, AE, AK, AN, AV</td>
<td>.330</td>
<td>6</td>
<td>036-0097-004</td>
<td>10-15</td>
<td>036-0097-003</td>
<td>18-22</td>
<td>036-0097-002</td>
</tr>
<tr>
<td>AMD, AMK, AND</td>
<td>.400</td>
<td>22</td>
<td>036-0099-002</td>
<td>28-43</td>
<td>036-0099-001</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note:** Dimensions are in inches and (millimeters). Tolerance ±.010 (.25) unless otherwise specified.
Most Viking card-edge connectors have the option of "between-contacts" polarization or "in-contact" polarization.

Connectors with part number prefix "2" or "3" have grooves or slots between contacts into which the polarizing key is pressed. The appropriate "between-contacts" polarizing key is referenced on the data pages for each series. A Viking part number which does not have a prefix of "2" or "3" does not have the "between-contacts" polarizing option.

If "in-contact" polarizing is desired, a pair of contacts must be removed and replaced by a key as detailed below. Therefore, two circuits are removed in the case of dual "readout" connectors and one circuit is removed in the case of single row connectors.

### Between-Contacts

**Between-Contacts**

**All .100" .125" Contact Centers**

Part Number: 091-0071-000
Material: Polyester
Key is pressed into grooves between contacts.

**Slot Dimensions**

<table>
<thead>
<tr>
<th>Key</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>0.050 (1.27)</td>
</tr>
<tr>
<td>B</td>
<td>0.350 (8.89)</td>
</tr>
</tbody>
</table>

**All .156" Contact Centers and HNG Series**

Part Number: 091-0024-000
Material: GF Polyester
Key is pressed into slots between contacts.

**Slot Dimensions**

<table>
<thead>
<tr>
<th>Key</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>0.050 (1.27)</td>
</tr>
<tr>
<td>B</td>
<td>0.350 (8.89)</td>
</tr>
</tbody>
</table>

### In-Contact

**In-Contact**

**JDD, JE, JN, JV Series CDD, CE, CN, CV Series**

Part Number: 091-0025-000
Material: GF Nylon
Key replaces two opposing contacts.
Key is pressed into empty contact cavities.

**Slot Dimensions**

<table>
<thead>
<tr>
<th>Key</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>0.070 (1.77)</td>
</tr>
<tr>
<td>B</td>
<td>0.350 (8.89)</td>
</tr>
</tbody>
</table>

**JND, JNK Series CND, CNK Series AMD, AMK, AND Series**

Part Number: 091-0051-000
Material: GF Nylon
Key replaces two opposing contacts.
Key is pressed into empty contact cavities.

**Slot Dimensions**

<table>
<thead>
<tr>
<th>Key</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>0.070 (1.77)</td>
</tr>
<tr>
<td>B</td>
<td>0.350 (8.89)</td>
</tr>
</tbody>
</table>

### Contact Replacement Tools

**How To Replace Damaged Contacts**

**Wire Wrap, Round Tail Dip Solder and Pierced Eyelet Contacts Only**

If a contact should become damaged and require replacement, special tools and replacement contacts are available. The technique and necessary tools are detailed below.

**Wire Wrap and Round Tail Dip Solder Series AMD, AMK, AND, CND, CNK, HNG, JND, JNK**

Viking's square wrap terminals and round tail dip solder terminals are retained in the insulator body by means of a press fit.

1. The use of an impact tool is suggested in removing the contact but other means can be used. Select the impact tool according to the chart. The impact tool slips over the tail of the damaged contact and is pushed firmly until the tool trips and drives the contact out.
2. Insert a replacement contact into the empty cavity from the front of the connector until the tail protrudes on the termination side.
3. Pull the tail using a pair of pliers until the contact is correctly seated and the tail is of equal length to the other contacts.

**W/W Series Replacement Contact D/S Series Replacement Contact Impact Tool**

<table>
<thead>
<tr>
<th>AMD, AND</th>
<th>CND</th>
<th>HNG</th>
<th>JND</th>
</tr>
</thead>
<tbody>
<tr>
<td>018-1140-002</td>
<td>018-1141-002</td>
<td>018-0526-002</td>
<td>018-1140-002</td>
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<tr>
<td>AMK</td>
<td>CNK</td>
<td>JNK</td>
<td>018-1149-002</td>
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<td>000407-0085</td>
<td>000407-0085</td>
<td>000407-0085</td>
<td></td>
</tr>
</tbody>
</table>

**Pierced Eyelet Series AN, CN, HN, JN**

Viking's pierced eyelet terminals are retained in the insulator body by a dimple at the point where the tail enters the insulator.

1. Using the cut-off tool, cut off the tail at the "dimpled" area and remove the damaged contact.
2. Insert a replacement contact into the empty cavity from the front of the connector until it is completely seated.
3. While holding the contact in the seated position, place the dimple tool over the tail and squeeze to form a dimple on the flat metal at the base of the insulator. The dimple should preferably face out from the center of the connector. The dimple retains the contact in the insulator.

**Pierced Series Replacement Contact Cut-Off Tool Dimple Tool**

<table>
<thead>
<tr>
<th>Series</th>
<th>Replacement Contact</th>
<th>Cut-Off Tool</th>
<th>Dimple Tool</th>
</tr>
</thead>
<tbody>
<tr>
<td>AN</td>
<td>018-0006-002</td>
<td>115-0109-000</td>
<td>115-0108-000</td>
</tr>
<tr>
<td>CN</td>
<td>018-0005-002</td>
<td>115-0531-000</td>
<td>115-0532-000</td>
</tr>
<tr>
<td>HN</td>
<td>018-0028-002</td>
<td>115-0109-000</td>
<td>115-0108-000</td>
</tr>
<tr>
<td>JN</td>
<td>018-0005-002</td>
<td>115-0533-000</td>
<td>115-0534-000</td>
</tr>
</tbody>
</table>

**Twist Tool Impact Tool Cut-Off Tool Dimple Tool**

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