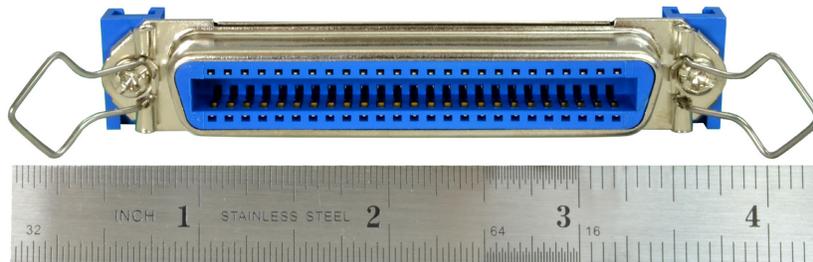


There is a wide array of different types of connectors that are used in various electrical instruments and equipment, and many of them share a lot of characteristics. Identifying what makes each one unique can be difficult, and trying to figure out which one you're dealing with can be even harder. In this connector guide, we'll talk about centronics, MDR, VHDCI, and half-pitch DSUB connectors. We'll highlight some of the differences between these connectors, and provide some examples of the way they're commonly used in the industry. At the end of this document, you'll find [a table that compares and contrasts the specifications of each connector type](#). Finally, we'll show you [some of our products that feature these four connectors](#).

## Centronics Connector

While other common connectors, like DSUBs, utilize standard pins, centronics connectors use small, flat bands of metal called sliding ribbon contacts. Centronics connectors are mainly used with telecom equipment, computer systems, and printers.



50 Pin Female Centronics Connector

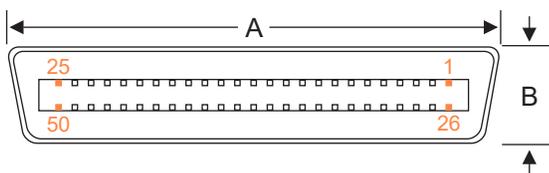
### Details

These connectors come with 14, 24, 36, or 50 contacts divided evenly between two rows. The pitch (the distance between the contacts) is 0.085 inches. The connectors come with either bail clips or screws which are used to securely fasten it to its receiving connector. Centronics connectors are also sometimes called micro-ribbon, CHAMP, RJ21, or amphenol connectors.

### Common Application & Use

- Twenty-four pin centronics connectors are used in General Purpose Interface Bus (GPIB), the industry standard for automated and industrial instrument control.
- Thirty-six pin centronics connectors were used in early PC printers.
- Fifty pin centronics connectors are used in various phone and telecom systems. They were also used in some old SCSI-1 systems.

### Dimensions of a Female Connector



	Length (A)	Height (B)
14 Pin	0.987"	0.465"
24 Pin	1.411"	0.465"
36 Pin	1.965"	0.465"
50 Pin	2.521"	0.465"

Is this the connector you're looking for? Jump to [Winford products with a centronics connector](#) on page six!

## MDR Connector

Like the centronics connector, MDR connectors utilize sliding ribbon contacts instead of standard pins. The size and spacing of the contacts are tighter, however, which makes this connector about half the size of a comparable centronics one. MDR connectors are widely used for low speed parallel port connections, or to allow equipment to communicate between shelves or cabinets.



68 Pin Female MDR Connector

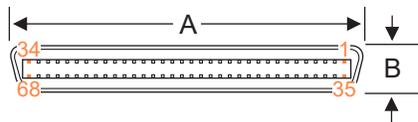
### Details

These connectors come with 14, 20, 26, 36, 40, 50, 68, 80, or 100 contacts divided evenly between two rows. The pitch (the distance between the contacts) is 0.05 inches. The connectors come with either screws or latches which are used to securely fasten it to its receiving connector. MDR connectors are also sometimes called mini delta ribbon, mini D ribbon, mini-centronics, half-pitch centronics, or HPCN connectors.

### Common Application & Use

- Brands like Panasonic and Mitsubishi use MDR connectors to interface with servo drives.
- LVDS FPD Link and Flat Link interfaces use MDR connectors to connect the output from a graphics processing unit to a display panel's timing controller in equipment like computers and tablets.
- Channel Link interfaces use MDR connectors to transfer data at high speeds over cables and backplanes.
- Parallel PC printers in the early 2000's used MDR connectors.

### Dimensions of a Female Connector

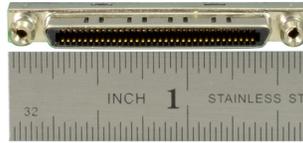


	Length (A)	Height (B)
14 Pin	0.50"	0.25"
20 Pin	0.65"	0.25"
26 Pin	0.80"	0.25"
36 Pin	1.05"	0.25"
40 Pin	1.15"	0.25"
50 Pin	1.40"	0.25"
68 Pin	1.85"	0.25"
80 Pin	2.15"	0.25"
100 Pin	2.65"	0.25"

Is this the connector you're looking for? Jump to [Winford products with an MDR connector](#) on page six!

## VHDCI Connector

VHDCI stands for Very High Density Cable Interconnect. Like the centronics and MDR connectors, VHDCI connectors utilize sliding ribbon contacts instead of standard pins. This connector, like its name suggests, provides



68 Pin Female VHDCI Connector

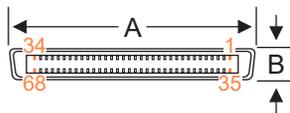
an even more compact arrangement of contacts, making it smaller than both the centronics and MDR connectors. Because of its size, a VHDCI connector is particularly useful in arrangements where space is limited.

### Details

These connectors come with 50 or 68 contacts divided evenly between two rows. The pitch (the distance between the contacts) is 0.031 inches. The connectors come with screws which are used to securely fasten it to its receiving connector. VHDCI connectors are also sometimes called Very High Density Connector Interfaces.

### Common Application & Use

- SCSI-5 systems use VHDCI connectors to communicate between PCs and peripheral hardware, like printers and disk drives.
- VHDCI connectors can be found in some National Instruments high speed I/O cards.



	Length (A)	Height (B)
50 Pin	0.965"	0.138"
68 Pin	1.246"	0.136"

### Dimensions of a Female Connector

Is this the connector you're looking for? Jump to [Winford products with a VHDCI connector](#) on page seven!

## Half-Pitch DSUB Connector

Half-Pitch DSUB connectors utilize pins and sockets like any other DSUB connector. These pins, however, sit



100 Pin Female Half-Pitch DSUB Connector

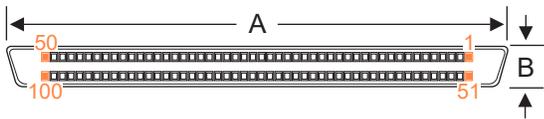
closer together, making this version of the connector much more compact. Like the VHDCI connector, a half-pitch DSUB connector is useful in arrangements where space is limited.

## Details

These connectors come with 26, 28, 50, 68, or 100 pins divided evenly between two rows. The pitch (the distance between the pins) is 0.05 inches. The connectors come with screws or latches which are used to securely fasten it to its receiving connector. Half-Pitch DSUB connectors are also sometimes called HP DSUB or HPDB connectors.

## Common Application & Use

- SCSI-2 systems used 50 pin half-pitch DSUB connectors to communicate between PCs and peripheral hardware, like printers and disk drives.
- National Instruments uses both 68 pin and 100 pin half-pitch DSUB connectors on some of their DAQ cards.

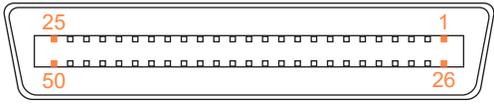
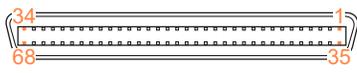
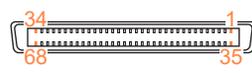
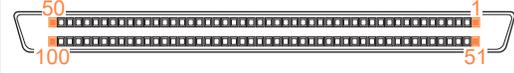


	Length (A)	Height (B)
26 Pin	0.766"	0.218"
28 Pin	0.816"	0.218"
50 Pin	1.366"	0.218"
68 Pin	1.816"	0.218"
100 Pin	2.616"	0.218"

## Dimensions of a Female Connector

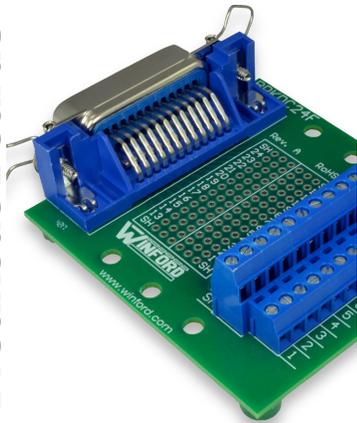
Is this the connector you're looking for? Jump to [Winford products with a half-pitch DSUB connector](#) on page seven!

## Connector Specifications

	 <p><b>Centronics</b></p>	 <p><b>MDR</b></p>	 <p><b>VHDCI</b></p>	 <p><b>Half Pitch DSUB</b></p>
Available Contact Counts	14, 24, 36, 50	14, 20, 26, 36, 40, 50, 68, 80, 100	50, 68	26, 28, 50, 68, 100
Rows of Contacts	2	2	2	2
Pitch (Distance Between Contacts)	0.085"	0.050"	0.031"	0.050"
Latching Hardware	Bail Clips or Screws	Screws or Latches	Screws	Screws or Latches
Dimensions of a 50 Pin Female Connector	2.521" x 0.465"	1.40" x 0.25"	0.965" x 0.138"	1.366" x 0.218"
Common Names	Centronics, Micro-Ribbon, CHAMP, RJ21, Amphenol	MDR, Mini Delta Ribbon, Mini D Ribbon, Mini-Centronics, Half-Pitch Centronics, HPCN	VHDCI, Very High Density Cable Interconnect, Very High Density Connector Interface	Half-Pitch DSUB, HP DSUB, HPDB

## Winford Centronics Products

### Breakout Boards

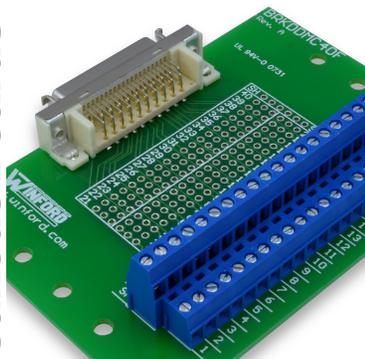


#### Right Angle Connectors

- 14 Pin Connector (BRKDC14)
- 24 Pin Connector (BRKDC24)
- 36 Pin Connector (BRKDC36)
- 50 Pin Connector (BRKDC50)

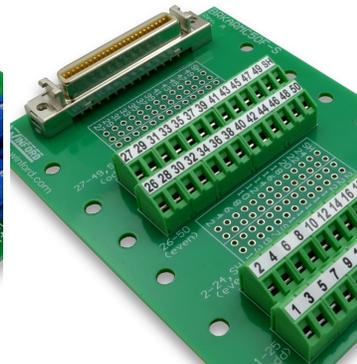
## Winford MDR Products

### Breakout Boards



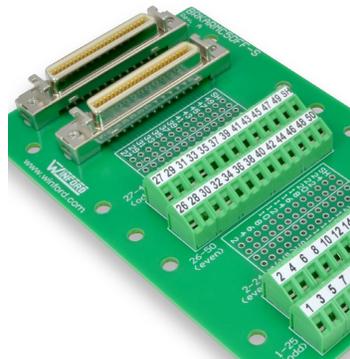
#### Right Angle Connectors

- 26 Pin Connector (BRKDDMC26)
- 36 Pin Connector (BRKDDMC36)
- 40 Pin Connector (BRKDDMC40)
- 50 Pin Connector (BRKARMC50F-R)
- 68 Pin Connector (BRKAMC68)



#### Straight Connectors

- 50 Pin Connector (BRKARMC50-S)



#### Dual Connectors

- 50 Pin Connector (BRKARMC50FF)
- 68 Pin Connector (BRKAMC68FF)

### Cables



#### 50 Pin Connectors

- 3 Feet Long (CBMDR50MA-3)
- 6 Feet Long (CBMDR50MA-6)

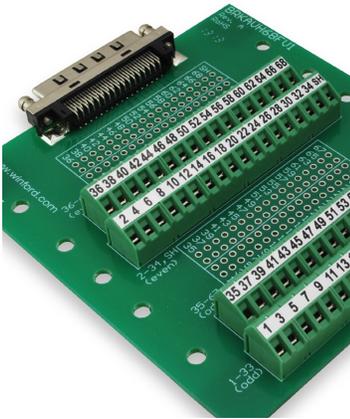


#### 68 Pin Connectors

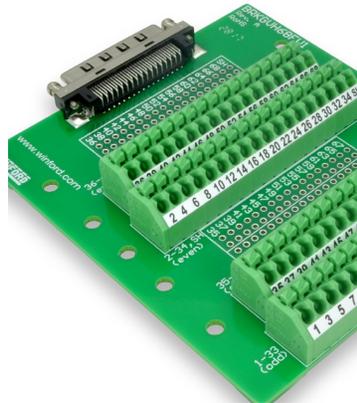
- 3 Feet Long (CBMDR68MB-3)
- 6 Feet Long (CBMDR68MB-6)

## Winford VHDCI Products

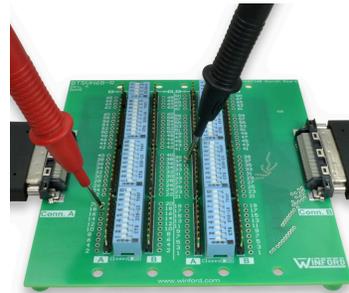
**Breakout Boards**



**Screw Terminals**  
68 Pin Connector (BRKAVH68FV1)



**Spring Terminals**  
68 Pin Connector (BRKGVH68FV1)



**Diagnostic/Switch**  
68 Pin Connector (BTSVH68-R)

**Cables**



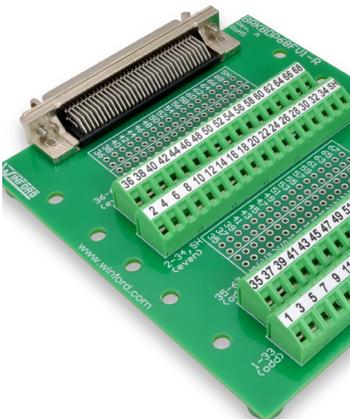
**50 Pin Connectors**  
6 Feet Long (CBVH50M-6)



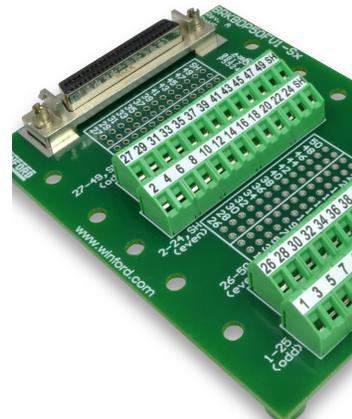
**68 Pin Connectors**  
1 Foot Long (CBVH68M-1)  
1.33 Feet Long (CBVH68M-1.33)  
3 Feet Long (CBVH68M-3)  
6 Feet Long (CBVH68M-6)  
10 Feet Long (CBVH68M-10)  
20 Feet Long (CBVH68M-20)

## Winford Half-Pitch DSUB Products

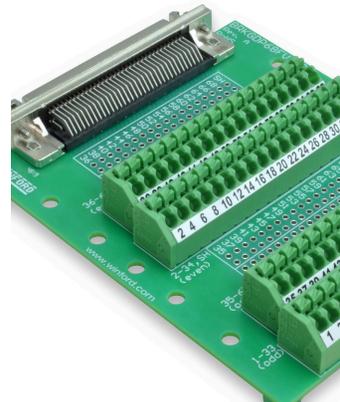
**Breakout Boards**



**Right Angle Connectors**  
68 Pin Connector (BRKBDP68FV1-R)  
100 Pin Connector (BRKADP100FV1-R)



**Straight Connectors**  
50 Pin Connector (BRKBDP50FV1)  
68 Pin Connector (BRKBDP68FV1-S)  
100 Pin Connector (BRKADP100FV1-S)



**Spring Terminals**  
68 Pin Connector (BRKGDP68FV1)

**Cables**



**50 Pin Connectors**  
3 Feet Long (CBHPD50MB-3)  
6 Feet Long (CBHPD50MB-6)



**68 Pin Connectors**  
3 Feet Long (CBHPD68MD-3)  
6 Feet Long (CBHPD68MD-6)