

# BI-LOBE<sup>®</sup> | NANO-D

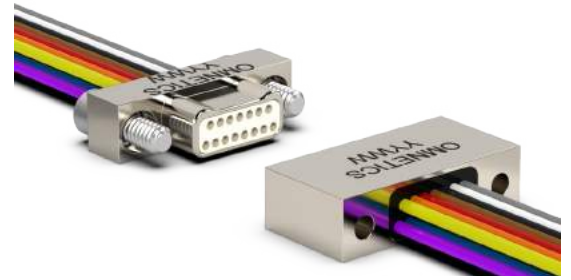
MISSION-CRITICAL INTERCONNECTION TECHNOLOGIES FOR  
RUGGED AND HARSH ENVIRONMENT



**OMNETICS**  
CONNECTOR CORPORATION

## DUAL ROW PRE-WIRED (TYPE WD)

**Pre-Wired Dual Row Bi-Lobe®** nanos feature 30 AWG or smaller sizes of stranded wire. Omnetics assembles them using our proprietary semi-automated crimping system, as their very small size requires special care and precision to accomplish a perfect crimp. Each unit is carefully hand-inspected throughout the assembly process. Pre-crimped wires and contacts are potted in place to further protect the integrity of the crimp joint. Designers may specify wire type, size, and color coding to achieve a near-custom part. COTS versions with 18" of color-coded AWG Teflon are also available for quick turnaround. These connectors come in standard sizes ranging from 9 to 91 positions, as well as custom configurations. Omnetics also offers full QPL versions of MIL-DTL-32139.



### Electro-Mechanical Specifications

TYPE	PERFORMANCE
Durability	> 2000 Mating Cycles min
Temperature	-55°C to +125 °C (200 °C w/HTE)
Current rating	1 Amp per contact
Voltage Rating (DWV)	250 VAC RMS Sea Level
Insulation Resistance	5,000 Megohms @ 100 VDC
Shock	100 g's discontinuity < 10 nanoseconds
Vibration	20 g's discontinuity < 10 nanoseconds
Thermal Vacuum Outgassing	1.0% max TML, 0.1% VCM
Contact Resistance	71 milliohms (71 mV) max @ 1 Amp
Mating/Unmating Force	2.5 oz. (.71g) typical per contact

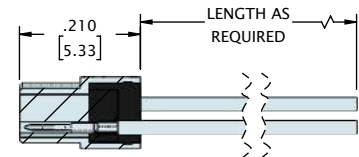
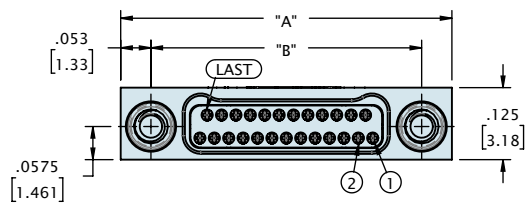
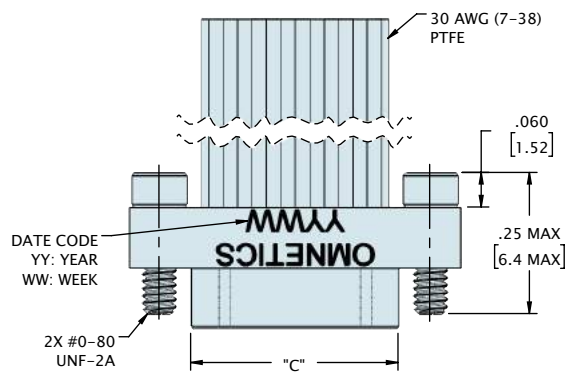
### Material Specifications

TYPE	PERFORMANCE
Contact	Copper Alloy Per MIL-DTL-32139
Contact Finish	Gold per ASTM B488, Type II, Class 1.27, Code C Over Nickel Underplate
Insulator	Thermoplastic per MIL-M-24519
Encapsulant	Epoxy

### Shell Options

TYPE	PERFORMANCE
Aluminum 6061	Electroless Nickel per SAE-AMS-2404
Stainless Steel, 300 Series	Passivated per SAE-AMS-2700

# DUAL ROW PRE-WIRED (TYPE WD)



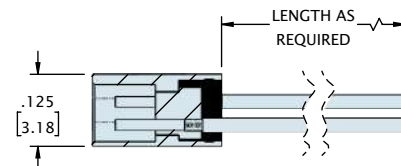
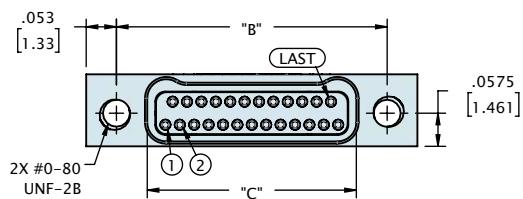
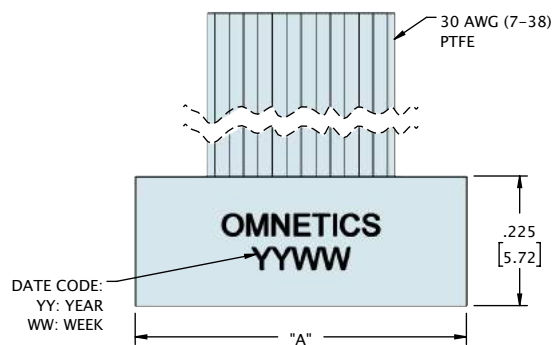
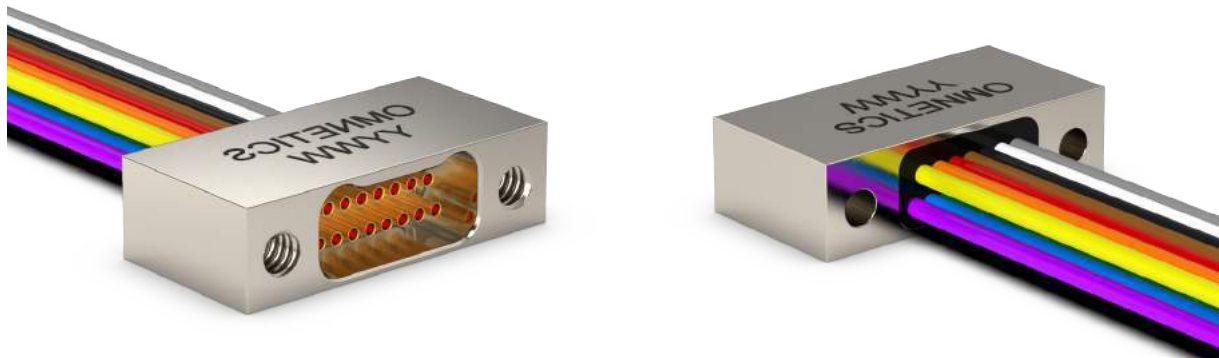
JACKSCREW HIDDEN FOR CLARITY

CONTACTS	"A"	"B"	"C"
09	.375 [9.53]	.270 [6.86]	.160 [4.06]
15	.450 [11.43]	.345 [8.76]	.235 [5.97]
21	.525 [13.34]	.420 [10.67]	.310 [7.87]
25	.575 [14.61]	.470 [11.94]	.360 [9.14]
31	.650 [16.51]	.545 [13.84]	.435 [11.05]
37	.725 [18.42]	.620 [15.75]	.510 [12.95]
51	.900 [22.86]	.795 [20.19]	.685 [17.40]
65	1.075 [27.31]	.970 [24.64]	.860 [21.84]
69	1.125 [28.58]	1.020 [25.91]	.910 [23.11]
85	1.325 [33.66]	1.220 [30.99]	1.110 [28.19]
91	1.452 [36.88]	1.321 [33.55]	1.185 [30.10]

DIMENSIONS IN [ ] ARE IN MILLIMETERS AND ARE FOR REFERENCE ONLY



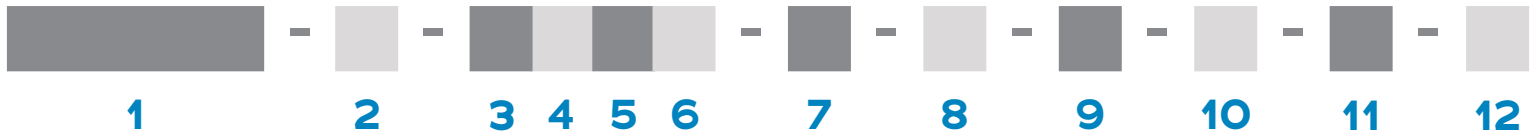
## DUAL ROW PRE-WIRED (TYPE WD)



CONTACTS	"A"	"B"	"C"
09	.375 [9.53]	.270 [6.86]	.163 [4.14]
15	.450 [11.43]	.345 [8.75]	.238 [6.05]
21	.525 [13.34]	.420 [10.67]	.313 [7.95]
25	.575 [14.61]	.470 [11.94]	.363 [9.22]
31	.650 [16.51]	.545 [13.84]	.438 [11.13]
37	.725 [18.42]	.620 [15.75]	.513 [13.03]
51	.900 [22.86]	.795 [20.19]	.688 [17.48]
65	1.075 [27.31]	.970 [24.64]	.863 [21.92]
69	1.125 [28.58]	1.020 [25.91]	.913 [23.19]
85	1.325 [33.66]	1.220 [30.99]	1.113 [28.27]
91	1.452 [36.88]	1.321 [33.55]	1.188 [30.18]

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## ORDERING GUIDE



1	Series	MNPO Metal Nano Pin Offset						MNSO Metal Nano Socket Offset				
2	Number Of Contacts	09	15	21	25	31	37	51	65	69	85	91
3	Termination Type	WD Discrete Wires					WC Cable					
4	Wire Gage	O 30 AWG (STD)					2 32 AWG					
5	Wire Type	Q NEMA HP3 (formerly M16878/4 and /6)							XX.X M22759/33 (30 AWG only)			
6	Wire Length	18.O 18.00" (STD)							XX.X Custom Length			
7	Color Scheme	C 10 Repeating Colors Per MIL STD 681							Y All Other Wire Color			
8	Shell Material & Finish	N Aluminum Shell, Electroless Nickel Plated							CD Aluminium shell, Cadmium Plated			
		B Aluminium Shell, Black Anodized							S Stainless steel Shell, Passivated			
		T Titanium Shell, Unplated										
9	Common Options	ETH End Threaded Hole, #0-80							EJS End Jack Screw			
		YY Non Standard Hardware (threaded holes, thumb screws, #2-56 screw)										
		HT High Temp. Epoxy							RH RoHS Compliant			
		BS1 Standard Straight Backshell							BS2 45 Oval			
		BS3 90/RA Oval							BS4 2 Piece BS			
		BSY Custom Backshell							CS Customer Supplied Material			
10	Shield / Jacket	D Slip-on Braid		E Machine Braid		F Flexo Braid		J Nomex Braid		ST Shrink Tube		
11	Mod Codes	M10 Keyed					M30 Ground Spring					
		M50 Space Grade Nano-D, SPT1					M53 Space Grade Nano-D, SPT2					
12	Special Instructions	YYY Describe anything that is not covered in standard options										

## DUAL ROW PANEL MOUNT

Omnetics' **Dual Row Bi-Lobe®** nanos are available with panel mount housings, which enables designers to use minimal real estate to create a streamlined I/O arrangement. Their low mass and .025" (.64 mm) centerlines make them an excellent choice for applications that endure high degrees of shock and vibration. Retention screws ensure a positive lock and termination options include pre-wired, SMT, flex mount, and straight tails. These durable, lightweight connectors feature Omnetics' gold-plated Flex Pin contact system and can intermate with all MIL-DTL-32139 plugs. Shell material options include aluminum and stainless steel, with custom plating options available upon request. These connectors are available in standard sizes ranging from 9 to 85 positions, as well as custom configurations.



### Electro-Mechanical Specifications

TYPE	PERFORMANCE
Durability	> 2000 Mating Cycles min
Temperature	-55°C to +125 °C (200 °C w/HTE)
Current rating	1 Amp per contact
Voltage Rating (DWV)	250 VAC RMS Sea Level
Insulation Resistance	5,000 Megohms @ 100 VDC
Shock	100 g's discontinuity < 10 nanoseconds
Vibration	20 g's discontinuity < 10 nanoseconds
Thermal Vacuum Outgassing	1.0% max TML, 0.1% VCM
Contact Resistance	71 milliohms (71 mV) max @ 1 Amp
Mating/Unmating Force	2.5 oz. (.71g) typical per contact

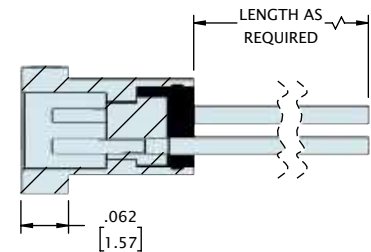
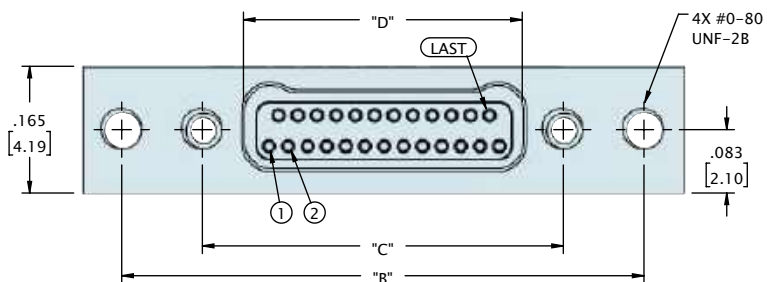
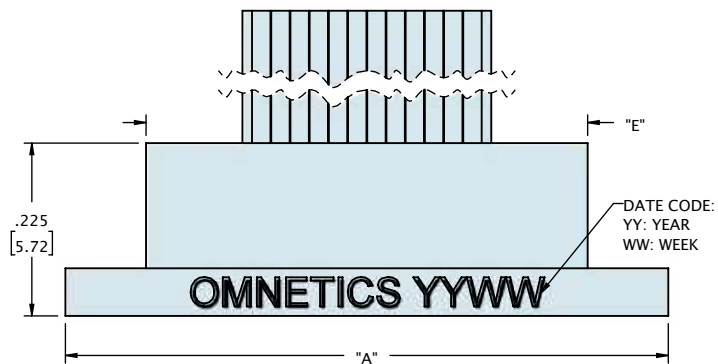
### Material Specifications

TYPE	PERFORMANCE
Contact	Copper Alloy Per MIL-DTL-32139
Contact Finish	Gold per ASTM B488, Type II, Class 1.27, Code C Over Nickel Underplate
Insulator	Thermoplastic per MIL-M-24519
Encapsulant	Epoxy

### Shell Options

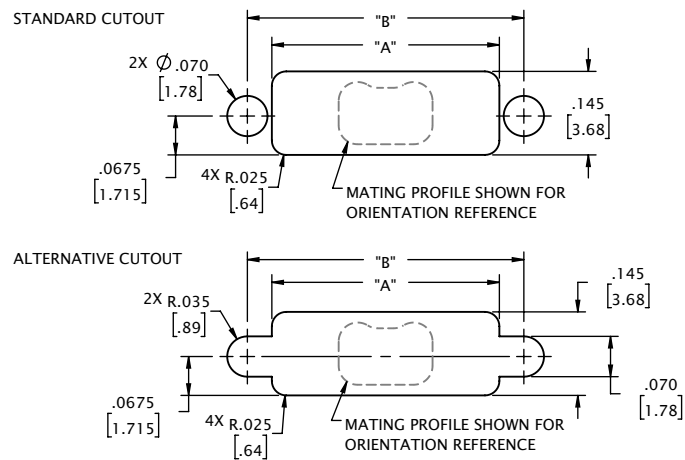
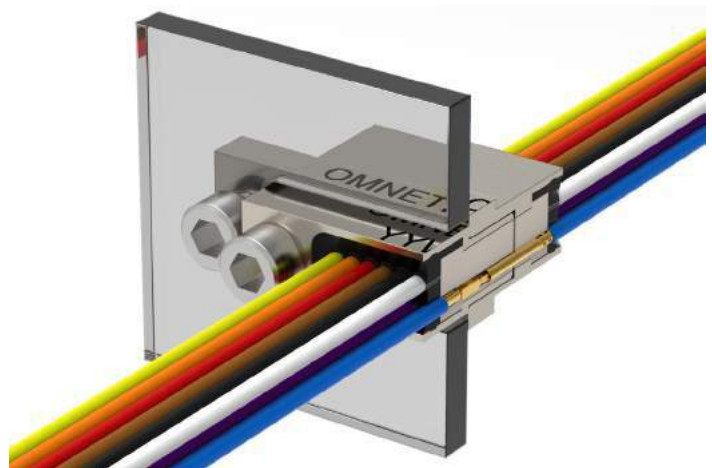
TYPE	PERFORMANCE
Aluminum 6061	Electroless Nickel per SAE-AMS-2404
Stainless Steel, 300 Series	Passivated per SAE-AMS-2700

## DUAL ROW PANEL MOUNT (TYPE WD)



CONTACTS	"A"	"B"	"C"	"D"	"E"
9	.585 [14.86]	.480 [12.19]	.270 [6.86]	.163 [4.14]	.375 [9.53]
15	.660 [16.76]	.555 [14.10]	.345 [8.76]	.238 [6.05]	.450 [11.43]
21	.735 [18.67]	.630 [16.00]	.420 [10.67]	.313 [7.95]	.525 [13.34]
25	.785 [19.94]	.680 [17.27]	.470 [11.94]	.363 [9.22]	.575 [14.61]
31	.860 [21.84]	.755 [19.18]	.545 [13.84]	.438 [11.13]	.650 [16.51]
37	.935 [23.75]	.830 [21.08]	.620 [15.75]	.513 [13.03]	.725 [18.42]
51	1.110 [28.19]	1.005 [25.53]	.795 [20.19]	.688 [17.48]	.900 [22.86]
65	1.285 [32.64]	1.180 [29.97]	.970 [24.64]	.863 [21.92]	1.075 [27.31]
85	1.535 [38.99]	1.430 [36.32]	1.220 [30.99]	1.113 [28.27]	1.325 [33.66]

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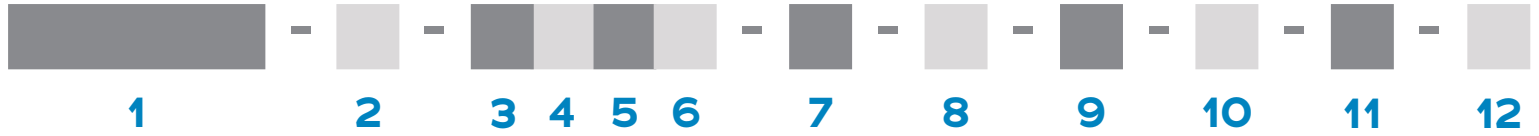


CONTACTS	"A"	"B"
09	.395 [10.03]	.480 [12.19]
15	.470 [11.94]	.555 [14.10]
21	.545 [13.84]	.630 [16.00]
25	.595 [15.11]	.680 [17.27]
31	.670 [17.02]	.755 [19.18]
37	.745 [18.92]	.830 [21.08]
51	.920 [23.37]	1.005 [25.53]
65	1.095 [27.81]	1.180 [29.97]
85	1.345 [34.16]	1.430 [36.32]

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## ORDERING GUIDE



1	Series	MNSOP Metal Nano Socket Offset Panel											
2	Number Of Contacts	09	15	21	25	31	37	51	65	69	85	91	
3	Termination Type	A Horizontal Surface Mount FF Flex Mount								DD Thru-Hole Straight WD Discrete Wires			
4	Wire Gage*	O 30 AWG (STD)					2 32 AWG						
5	Wire Type*	Q NEMA HP3 (formerly M16878/4 and /6)							XX.X M22759/33 (30 AWG only)				
6	Wire Length*	18.O 18.00" (STD)							XX.X Custom Length				
7	Color Scheme*	C 10 repeating colors per MIL STD 681							Y All other wire colors				
8	Shell Material & Finish	N Aluminum Shell, Electroless Nickel Plated							CD Aluminium shell, Cadmium Plated				
		B Aluminium Shell, Black Anodized							S Stainless steel Shell, Passivated				
		T Titanium Shell, Unplated											
9	Common Options	ETH End Threaded Hole, #0-80							EJS End Jack Screw				
		NTH Non-Threaded Holes for mounting to the board											
		YY Non Standard Hardware (threaded holes, thumb screws, #2-56 screw)											
		HT High Temp. Epoxy							RH RoHS Compliant				
		CS Customer Supplied Material											
10	Shield / Jacket*	D Slip-on Braid		E Machine Braid		F Flexo Braid		J Nomex Braid		ST Shrink Tube			
11	Mod Codes	M10 Keyed					M30 Ground Spring						
		M50 Space Grade Nano-D, SPT1					M53 Space Grade Nano-D, SPT2						
12	Special Instructions	YYY Describe anything that is not covered in standard options											

\* WD only

## DUAL ROW LATCHING BI-LOBE®

Omnetics' **Bi-Lobe®** connectors are available in a quick-latch version. This option requires no tools and makes it very easy for operators to achieve a secure connection in the field. These durable, lightweight connectors feature Omnetics' gold-plated Flex Pin contact system and ensure connectivity in the most demanding applications. They are spaced on .025" (.64 mm) centerlines and can carry 1 amp per contact. These connectors are available in standard sizes ranging from 9 to 65 positions, and can be configured with discrete wires, over-molded cable, panel mount housings, and PCB-mounted versions.



### Electro-Mechanical Specifications

TYPE	PERFORMANCE
Durability	> 2000 Mating Cycles min
Temperature	-55°C to +125 °C (200 °C w/HTE)
Current rating	1 Amp per contact
Voltage Rating (DWV)	250 VAC RMS Sea Level
Insulation Resistance	5,000 Megohms @ 100 VDC
Shock	100 g's discontinuity < 10 nanoseconds
Vibration	20 g's discontinuity < 10 nanoseconds
Thermal Vacuum Outgassing	1.0% max TML, 0.1% VCM
Contact Resistance	71 milliohms (71 mV) max @ 1 Amp
Mating/Unmating Force	2.5 oz. (.71g) typical per contact

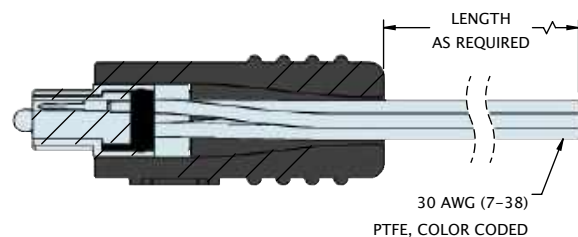
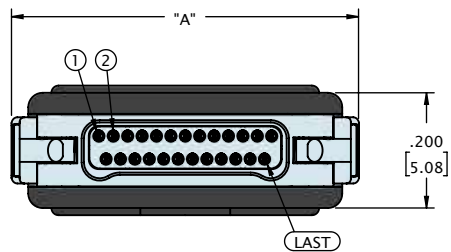
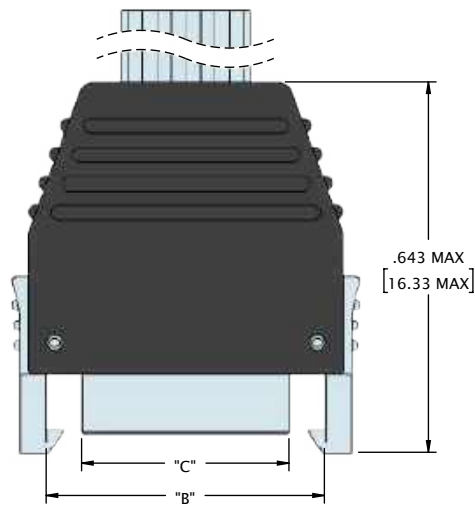
### Material Specifications

TYPE	PERFORMANCE
Contact	Copper Alloy Per MIL-DTL-32139
Contact Finish	Gold per ASTM B488, Type II, Class 1.27, Code C Over Nickel Underplate
Insulator	Thermoplastic per MIL-M-24519
Encapsulant	Epoxy

### Shell Options

TYPE	PERFORMANCE
Aluminum 6061	Electroless Nickel per SAE-AMS-2404
Stainless Steel, 300 Series	Passivated per SAE-AMS-2700

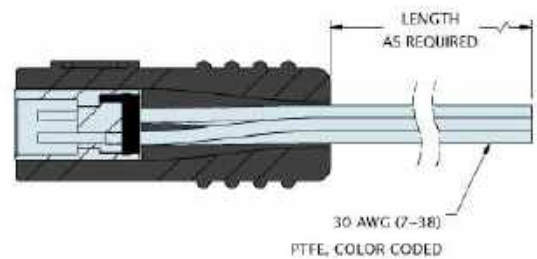
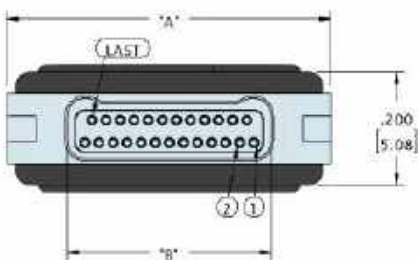
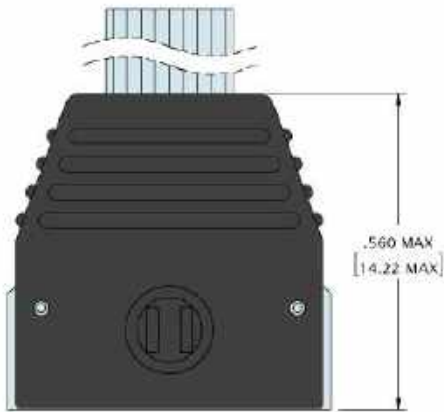
# DUAL ROW LATCHING BI-LOBE® (TYPE WD)



CONTACTS	"A"	"B"	"C"
09	.403 [10.25]	.283 [7.19]	.160 [4.06]
15	.478 [12.15]	.358 [9.09]	.235 [5.97]
21	.553 [14.06]	.433 [11.00]	.310 [7.87]
25	.603 [15.33]	.483 [12.27]	.360 [9.14]
31	.678 [17.23]	.558 [14.17]	.435 [11.05]
37	.753 [19.14]	.633 [16.08]	.510 [12.95]
51	.928 [23.58]	.808 [20.52]	.685 [17.40]
65	1.103 [28.03]	.983 [24.97]	.860 [21.84]

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## DUAL ROW LATCHING BI-LOBE® (TYPE WD)



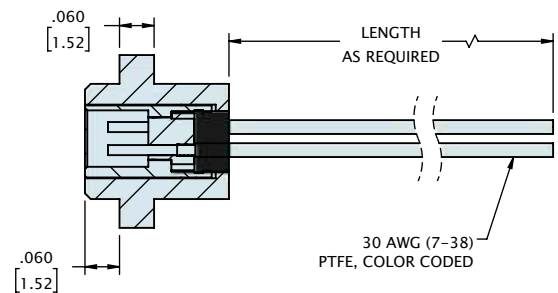
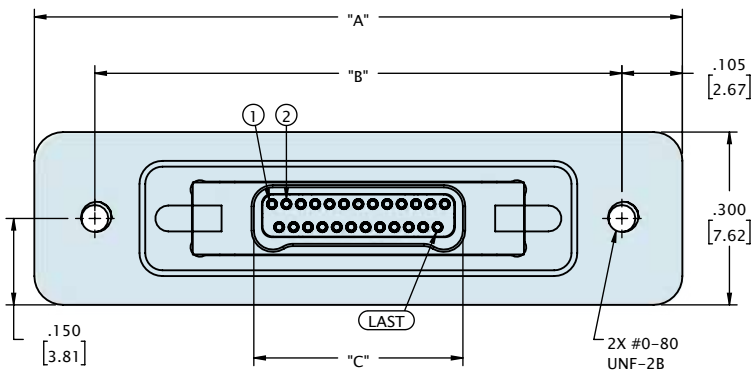
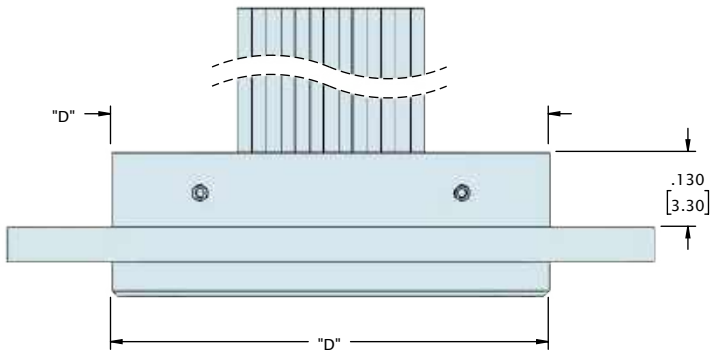
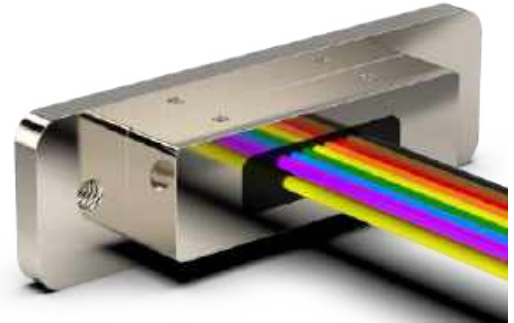
CONTACTS	"A"	"B"
09	.375 [9.53]	.163 [4.14]
15	.450 [11.43]	.238 [6.05]
21	.525 [13.34]	.313 [7.95]
25	.575 [14.61]	.363 [9.22]
31	.650 [16.51]	.438 [11.13]
37	.725 [18.42]	.513 [13.03]
51	.900 [22.86]	.688 [17.48]
65	1.075 [27.31]	.863 [21.92]

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# DUAL ROW LATCHING BI-LOBE® (TYPE WD)

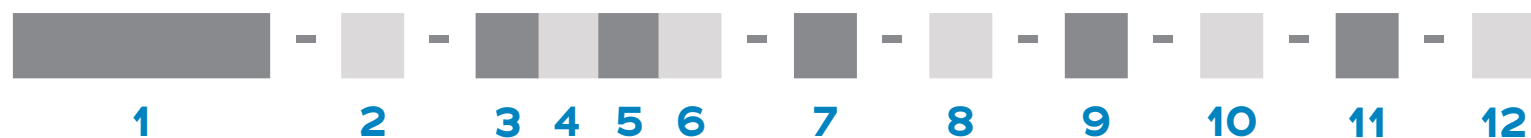
## PANEL MOUNT



CONTACTS	"A"	"B"	"C"	"D"
09	.925 [23.50]	.715 [18.16]	.163 [4.14]	.560 [14.22]
15	1.000 [25.40]	.790 [20.07]	.238 [6.05]	.635 [16.13]
21	1.075 [27.31]	.865 [21.97]	.313 [7.95]	.710 [18.03]
25	1.125 [28.58]	.915 [23.24]	.363 [9.22]	.760 [19.30]
31	1.200 [30.48]	.990 [25.15]	.438 [11.13]	.835 [21.21]
37	1.275 [32.39]	1.065 [27.05]	.513 [13.03]	.910 [23.11]
51	1.450 [36.83]	1.240 [31.50]	.688 [17.48]	1.085 [27.56]
65	1.625 [41.28]	1.415 [35.94]	.863 [21.92]	1.260 [32.00]

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## ORDERING GUIDE



1	Series	MNPL Metal Nano Pin Latch						MNSL Metal Nano Socket Latch					
		MNSLP Metal Nano Socket Latch Panel											
2	Number Of Contacts	09	15	21	25	31	37	51	65				
3	Termination Type	AA Horizontal Surface Mount					DD Thru-Hole Straight			FF Flex Tail			
		H4 Horizontal Thru-Hole					WD Discrete Wires						
4	Wire Gage*	0 30 AWG (STD)					2 32 AWG						
5	Wire Type*	Q NEMA HP3 (formerly M16878/4 and /6)							XX.X M22759/33 (30 AWG only)				
6	Wire Length*	18.0 18.00" (STD)							XX.X Custom Length				
7	Color Scheme*	C 10 Repeating Colors Per MIL STD 681							Y All Other Wire Colors				
8	Shell Material & Finish	N Aluminum Shell, Electroless Nickel Plated						CD Aluminium shell, Cadmium Plated					
		B Aluminium Shell, Black Anodized						S Stainless steel Shell, Passivated					
		T Titanium Shell, Unplated											
9	Common Options	SR Strain Relief **											
		YY Non Standard Hardware (threaded holes, thumb screws, #2-56 screw)											
		HT High Temp. Epoxy						RH RoHS Compliant					
		BS1 Standard Straight Backshell						BS2 45 Oval					
		BS3 90/RA Oval						BS4 2 Piece BS					
		BSY Custom Backshell						CS Customer Supplied Material					
10	Shield / Jacket*	D Slip-on Braid		E Machine Braid		F Flexo Braid		J Nomex Braid		ST Shrink Tube			
11	Mod Codes	M10 Keyed					M30 Ground Spring						
		M50 Space Grade Nano-D, SPT1					M53 Space Grade Nano-D, SPT2						
12	Special Instructions	YYY Describe anything that is not covered in standard options											

\* WD only      \*\* MNPL & MNSL only

## DUAL ROW JUMPERS (TYPE JUM)

Omnetics' **Pre-Wired Dual Row Bi-Lobe®** harnesses are built to order by Omnetics to offer maximum flexibility in wire type, size, and color-coding. They are designed to accommodate 30 AWG and smaller stranded wire and feature .025" (.64 mm) centerlines, which makes them an excellent choice for routing multiple lines through confined spaces. They feature Omnetics' gold-plated Flex Pin contact system. Shell material options include aluminum, titanium, and stainless steel, with custom plating options available upon request. These connectors are available in standard sizes ranging from 9 to 91 positions, as well as custom configurations.



### Electro-Mechanical Specifications

TYPE	PERFORMANCE
Durability	> 2000 Mating Cycles min
Temperature	-55°C to +125 °C (200 °C w/HTE)
Current rating	1 Amp per contact
Voltage Rating (DWV)	250 VAC RMS Sea Level
Insulation Resistance	5,000 Megohms @ 100 VDC
Shock	100 g's discontinuity < 10 nanoseconds
Vibration	20 g's discontinuity < 10 nanoseconds
Thermal Vacuum Outgassing	1.0% max TML, 0.1% VCM
Contact Resistance	71 milliohms (71 mV) max @ 1 Amp
Mating/Unmating Force	2.5 oz. (.71g) typical per contact

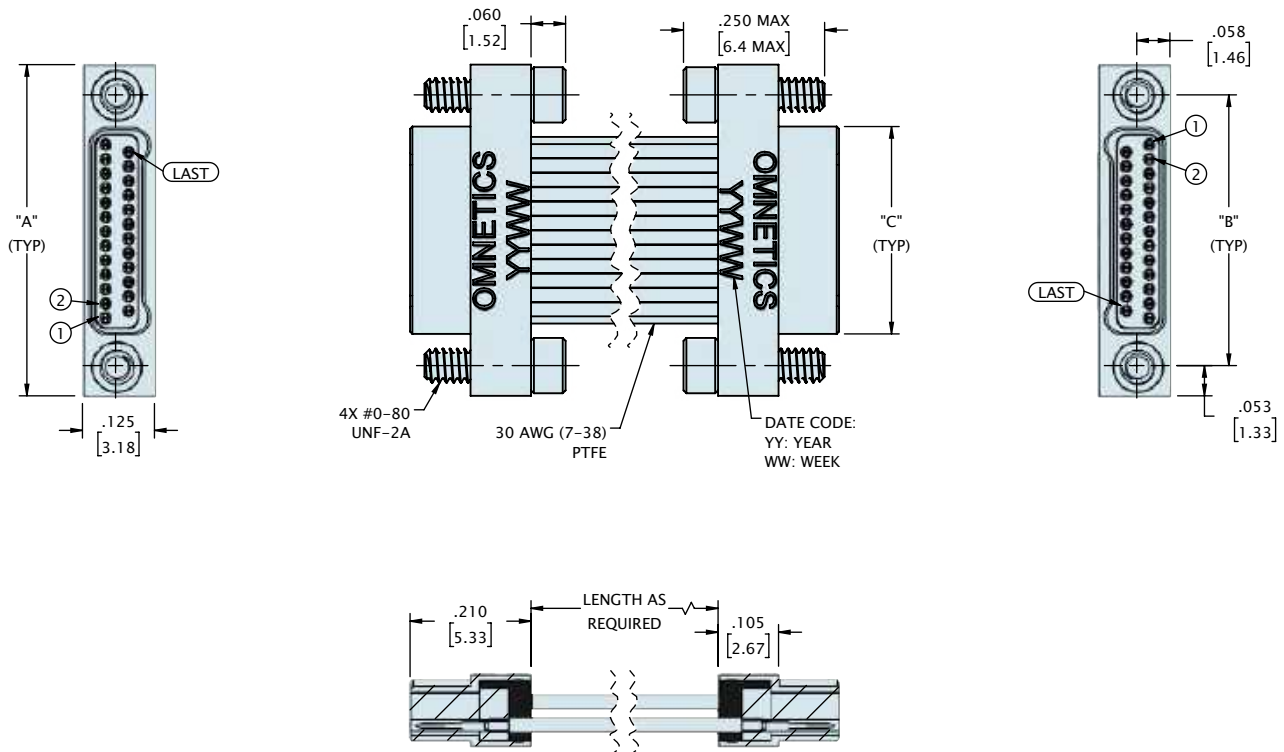
### Material Specifications

TYPE	PERFORMANCE
Contact	Copper Alloy Per MIL-DTL-32139
Contact Finish	Gold per ASTM B488, Type II, Class 1.27, Code C Over Nickel Underplate
Insulator	Thermoplastic per MIL-M-24519
Encapsulant	Epoxy

### Shell Options

TYPE	PERFORMANCE
Aluminum 6061	Electroless Nickel per SAE-AMS-2404
Stainless Steel, 300 Series	Passivated per SAE-AMS-2700

# DUAL ROW MALE TO MALE JUMPERS (TYPE JUM)



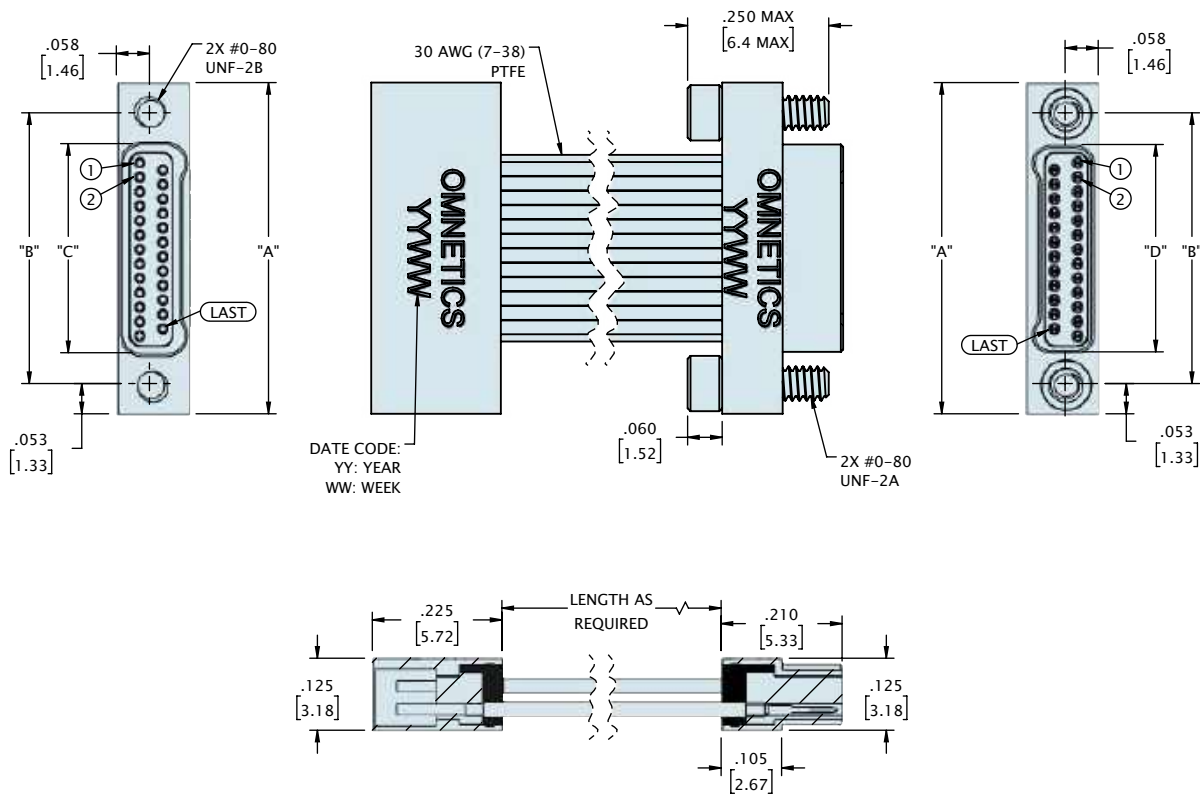
JACKSCREWS HIDDEN FOR CLARITY

CONTACTS	"A"	"B"	"C"
09	.375 [9.53]	.270 [6.86]	.160 [4.06]
15	.450 [11.43]	.345 [8.76]	.235 [5.97]
21	.525 [13.34]	.420 [10.67]	.310 [7.87]
25	.575 [14.61]	.470 [11.94]	.360 [9.14]
31	.650 [16.51]	.545 [13.84]	.435 [11.05]
37	.725 [18.42]	.620 [15.75]	.510 [12.95]
51	.900 [22.86]	.795 [20.19]	.685 [17.40]
65	1.075 [27.31]	.970 [24.64]	.860 [21.84]
69	1.125 [28.58]	1.020 [25.91]	.910 [23.11]
85	1.325 [33.66]	1.220 [30.99]	1.110 [28.19]
91	1.452 [36.88]	1.321 [33.55]	1.185 [30.10]

DIMENSIONS IN [ ] ARE IN MILLIMETERS AND ARE FOR REFERENCE ONLY



# DUAL ROW MALE TO FEMALE JUMPERS (TYPE JUM)

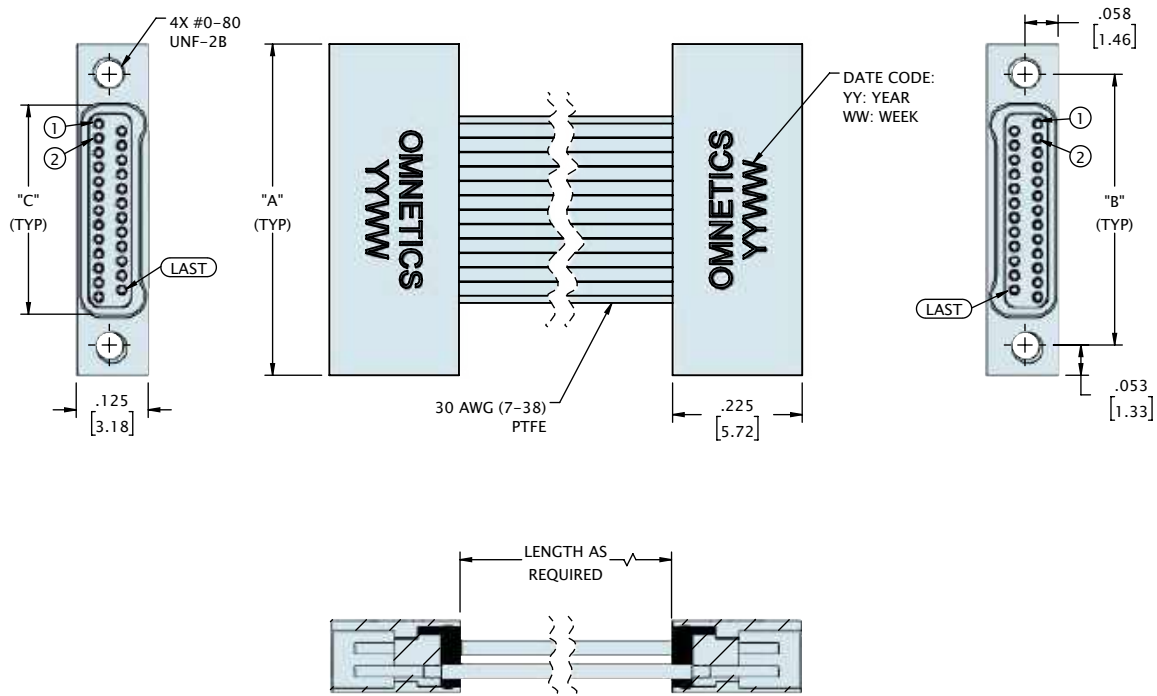


JACKSCREWS HIDDEN FOR CLARITY

CONTACTS	"A"	"B"	"C"	"D"
09	.375 [9.53]	.270 [6.86]	.163 [4.14]	.160 [4.06]
15	.450 [11.43]	.345 [8.75]	.238 [6.05]	.235 [5.97]
21	.525 [13.34]	.420 [10.67]	.313 [7.95]	.310 [7.87]
25	.575 [14.61]	.470 [11.94]	.363 [9.22]	.360 [9.14]
31	.650 [16.51]	.545 [13.84]	.438 [11.13]	.435 [11.05]
37	.725 [18.42]	.620 [15.75]	.513 [13.03]	.510 [12.95]
51	.900 [22.86]	.795 [20.19]	.688 [17.48]	.685 [17.40]
65	1.075 [27.31]	.970 [24.64]	.863 [21.92]	.860 [21.84]
69	1.125 [28.58]	1.020 [25.91]	.913 [23.19]	.910 [23.11]
85	1.325 [33.66]	1.220 [30.99]	1.113 [28.27]	1.110 [28.19]
91	1.452 [36.88]	1.321 [33.55]	1.188 [30.18]	1.185 [30.10]

DIMENSIONS IN [ ] ARE IN MILLIMETERS AND ARE FOR REFERENCE ONLY

# DUAL ROW FEMALE TO FEMALE JUMPERS (TYPE JUM)

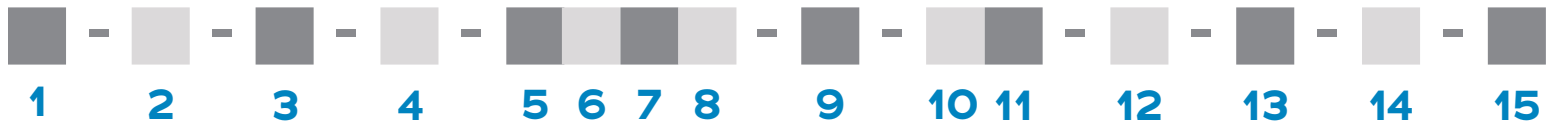


CONTACTS	"A"	"B"	"C"
09	.375 [9.53]	.270 [6.86]	.163 [4.14]
15	.450 [11.43]	.345 [8.75]	.238 [6.05]
21	.525 [13.34]	.420 [10.67]	.313 [7.95]
25	.575 [14.61]	.470 [11.94]	.363 [9.22]
31	.650 [16.51]	.545 [13.84]	.438 [11.13]
37	.725 [18.42]	.620 [15.75]	.513 [13.03]
51	.900 [22.86]	.795 [20.19]	.688 [17.48]
65	1.075 [27.31]	.970 [24.64]	.863 [21.92]
69	1.125 [28.58]	1.020 [25.91]	.913 [23.19]
85	1.325 [33.66]	1.220 [30.99]	1.113 [28.27]
91	1.452 [36.88]	1.321 [33.55]	1.188 [30.18]

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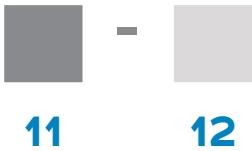
# DUAL ROW JUMPERS (TYPE JUM)

## ORDERING GUIDE



1	Series	JUM Jumpers											
2	Number Of Contacts	09	15	21	25	31	37	51	65	69	85	91	
3	Connector 1	MNPO Metal Nano Pin Offset						MNSO Metal Nano Socket Offset					
4	Connector 2	MNPO Metal Nano Pin Offset						MNSO Metal Nano Socket Offset					
5	Termination	WD Discrete Leadwire			WC Cable		WX Multiple Wire Types			TW Twisted Wires			
6	Wire AWG	0 30 AWG			2 32 AWG								
7	Wire Type	Q NEMA HP3			R M22759/11			S M22759/33			X Other Wire Types		
8	Wire Length	18.0					XX.X						
9	Color Coded	C 10 Repeating Colors Per MIL STD 681								Y All Other Wire Colors			
10	Shell / Material Finish	N Aluminum Shell, Electroless Nickel Plated						T Titanium Shell, Unplated					
		B Aluminium Shell, Black Anodized						CD Aluminium shell, Cadmium Plated					
		BN Aluminium Shell, Black Nickel Plated						P Stainless steel Shell, Passivated					
11	Hardware	See table page 49											
12	Common Options	See table page 49											
13	Shield / Jacket	D Slip On Metal Braid					E Machine Braid					F Flexo Braid	
		J Nomex Braid					ST Shrink Tube						
14	Mod Codes	M50 Space Grade Micro-D, SPT1						M53 Space Grade Micro-D, SPT2					
15	Special Instructions	YYY Describe anything that is not covered in standard options											

ORDERING GUIDE



11 Hardware

- 00 None, Ø .092 Hole (STD)
- 01 Fixed Jack-Posts (STD)
- 02 Jackscrews, STD Length, Hex Head (STD)
- 03 Jackscrews, STD Length, Slotted
- 04 Jackscrews, Long, Hex
- 05 Jackscrews, Long, Slotted
- 06 Float Mount, Front Mounted
- 07 Float Mount, Rear Mounted
- 08 Non-removable
- 13 Fixed Jackspots (STD)
- 14 Jackscrews STD Length, Hex Head (STD)
- 15 One set of each, Fixed Jackspots & Jackscrews, Standard Length, Hex Head (STD)
- YY Non Standard Hardware

12 Common Options

- |                               |                                 |
|-------------------------------|---------------------------------|
| ETH End Threaded Hole, #0-80  | EJS End Jack Screw              |
| HT High Temp. Epoxy           | RH RoHS Compliant               |
| FP Front Panel Mount          | SR Strain Relief                |
| CS Customer Supplied Material | RP Rear Panel Mount             |
| IS Inline Shell               | OR O-Ring                       |
| OM Overmold                   | BS1 Standard Straight Backshell |
| BS2 45 Oval                   | BS3 90/RA Oval                  |
| BS4 2 Piece BS                | BSY Custom Backshell            |



## SINGLE ROW PRE-WIRED (TYPE WD)

Omnetics' **Pre-Wired Single Row Bi-Lobe®** nanos feature 30 AWG or smaller sizes of stranded wire. They are assembled using our proprietary semi-automated crimping system, as their very small size requires special care and precision to accomplish a perfect crimp. Each unit is carefully hand-inspected throughout the assembly process. Pre-crimped wires and contacts are potted in place to further protect the integrity of the crimp joint. Designers may specify wire type, size, and color coding to achieve a near-custom part. COTS versions are also available with 18" of color-coded AWG Teflon for quick turnaround. These connectors come in standard sizes ranging from 5 to 51 positions as well as custom configurations. Omnetics also offers full QPL versions of MIL-DTL-32139.



### Electro-Mechanical Specifications

TYPE	PERFORMANCE
Durability	> 2000 Mating Cycles min
Temperature	-55°C to +125 °C (200 °C w/HTE)
Current rating	1 Amp per contact
Voltage Rating (DWV)	250 VAC RMS Sea Level
Insulation Resistance	5,000 Megohms @ 100 VDC
Shock	100 g's discontinuity < 10 nanoseconds
Vibration	20 g's discontinuity < 10 nanoseconds
Thermal Vacuum Outgassing	1.0% max TML, 0.1% VCM
Contact Resistance	71 milliohms (71 mV) max @ 1 Amp
Mating/Unmating Force	2.5 oz. (.71g) typical per contact

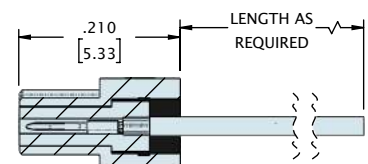
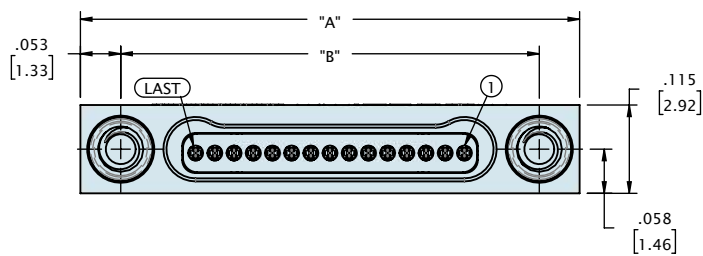
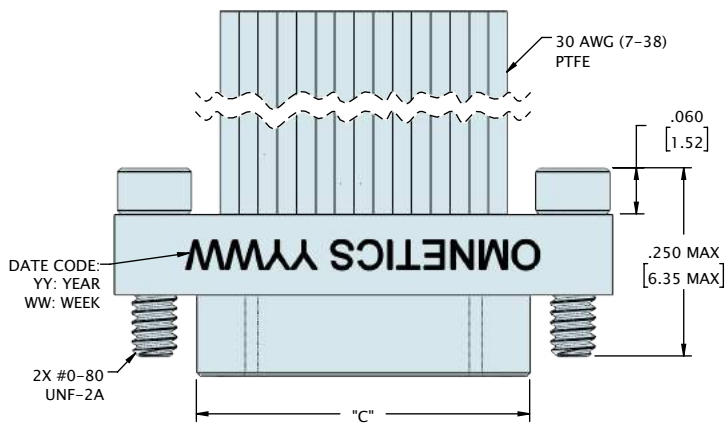
### Material Specifications

TYPE	PERFORMANCE
Contact	Copper Alloy Per MIL-DTL-32139
Contact Finish	Gold per ASTM B488, Type II, Class 1.27, Code C Over Nickel Underplate
Insulator	Thermoplastic per MIL-M-24519
Encapsulant	Epoxy

### Shell Options

TYPE	PERFORMANCE
Aluminum 6061	Electroless Nickel per SAE-AMS-2404
Stainless Steel, 300 Series	Passivated per SAE-AMS-2700

# SINGLE ROW PRE-WIRED (TYPE WD)

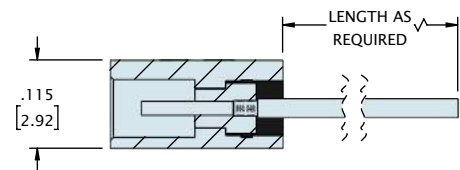
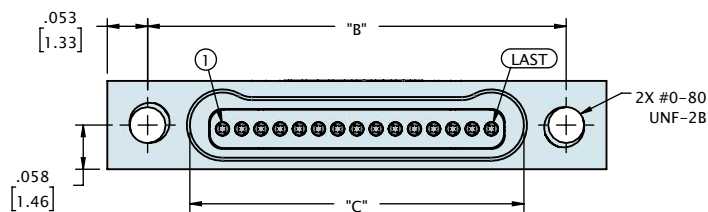
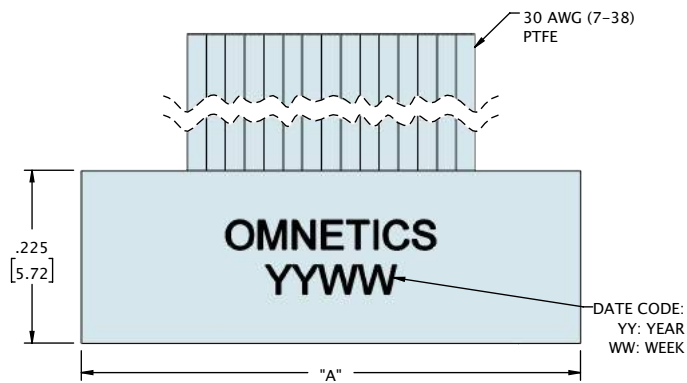


JACKSCREW NOT SHOWN FOR CLARITY

CONTACTS	"A"	"B"	"C"
05	.400 [10.16]	.295 [7.49]	.184 [4.67]
09	.500 [12.70]	.395 [10.03]	.284 [7.21]
15	.650 [16.51]	.545 [13.84]	.434 [11.02]
21	.800 [20.32]	.695 [17.65]	.584 [14.83]
25	.900 [22.86]	.795 [20.19]	.684 [17.37]
31	1.050 [26.67]	.945 [24.00]	.834 [21.18]
37	1.200 [30.48]	1.095 [27.81]	.984 [24.99]
51	1.550 [39.37]	1.445 [36.70]	1.334 [33.88]

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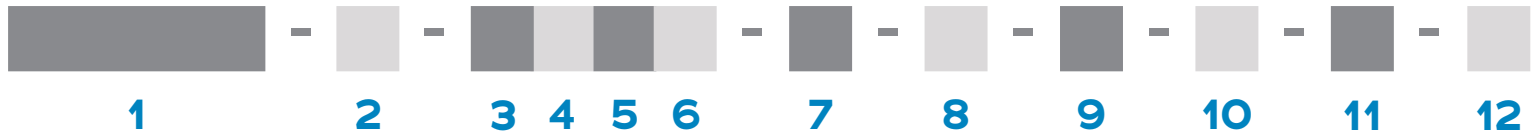
## SINGLE ROW PRE-WIRED (TYPE WD)



CONTACTS	"A"	"B"	"C"
05	.400 [10.16]	.295 [7.49]	.185 [4.70]
09	.500 [12.70]	.395 [10.03]	.285 [7.24]
15	.650 [16.51]	.545 [13.84]	.435 [11.05]
21	.800 [20.32]	.695 [17.65]	.585 [14.86]
25	.900 [22.86]	.795 [20.19]	.685 [17.40]
31	1.050 [26.67]	.945 [24.00]	.835 [21.21]
37	1.200 [30.48]	1.095 [27.81]	.985 [25.02]
51	1.550 [39.37]	1.445 [36.70]	1.335 [33.91]

DIMENSIONS IN [ ] ARE IN MILLIMETERS AND ARE FOR REFERENCE ONLY

## ORDERING GUIDE



1	Series	MBPS Metal Bi-Lobe Pin Single-Row					MBSS Metal Bi-Lobe Socket Single-Row		
2	Number Of Contacts	05	09	15	21	25	31	37	51
3	Termination Type	WD Discrete Wires							
4	Wire Gage	O 30 AWG (STD)				2 32 AWG			
5	Wire Type	Q NEMA HP3 (formerly M16878/4 and /6)					XX.X M22759/33 (30 AWG only)		
6	Wire Length	18.O 18.00" (STD)					XX.X Custom Length		
7	Color Scheme	C 10 Repeating Colors Per MIL STD 681					Y All Other Wire Colors		
8	Shell Material & Finish	N Aluminum Shell, Electroless Nickel Plated					CD Aluminium Shell, Cadmium Plated		
		B Aluminium Shell, Black Anodized					S Stainless Steel Shell, Passivated		
		T Titanium Shell, Unplated							
9	Common Options	ETH End Threaded Hole, #0-80					EJS End Jack Screw		
		YY Non Standard Hardware (threaded holes, thumb screws, #2-56 screw)							
		HT High Temp. Epoxy					RH RoHS Compliant		
		BS1 Standard Straight Backshell					BS2 45 Oval		
		BS3 90/RA Oval					BS4 2 Piece BS		
		BSY Custom Backshell					CS Customer Supplied Material		
10	Shield / Jacket	D Slip-on Braid	E Machine Braid	F Flexo Braid	J Nomex Braid	ST Shrink Tube			
11	Mod Codes	M10 Keyed					M30 Ground Spring		
		M50 Space Grade Nano-D, SPT1					M53 Space Grade Nano-D, SPT2		
12	Special Instructions	YYY Describe anything that is not covered in standard options							



## SINGLE ROW JUMPERS (TYPE JUM)

Omnetics' **Single Row Bi-Lobe®** harnesses are built to order by Omnetics to ensure maximum flexibility in wire type, size, and color-coding. They are designed to accommodate 30 AWG and smaller stranded wire and feature .025" (.64) centerlines, which makes them an excellent choice for routing multiple lines through confined spaces. They feature Omnetics' gold-plated Flex Pin contact system. Shell material options include aluminum, titanium, and stainless steel, with custom plating options available upon request. These connectors are available in standard sizes ranging from 5 through 51 positions, as well as custom configurations.



### Electro-Mechanical Specifications

TYPE	PERFORMANCE
Durability	> 2000 Mating Cycles min
Temperature	-55°C to +125 °C (200 °C w/HTE)
Current rating	1 Amp per contact
Voltage Rating (DWV)	250 VAC RMS Sea Level
Insulation Resistance	5,000 Megohms @ 100 VDC
Shock	100 g's discontinuity < 10 nanoseconds
Vibration	20 g's discontinuity < 10 nanoseconds
Thermal Vacuum Outgassing	1.0% max TML, 0.1% VCM
Contact Resistance	71 milliohms (71 mV) max @ 1 Amp
Mating/Unmating Force	2.5 oz. (.71g) typical per contact

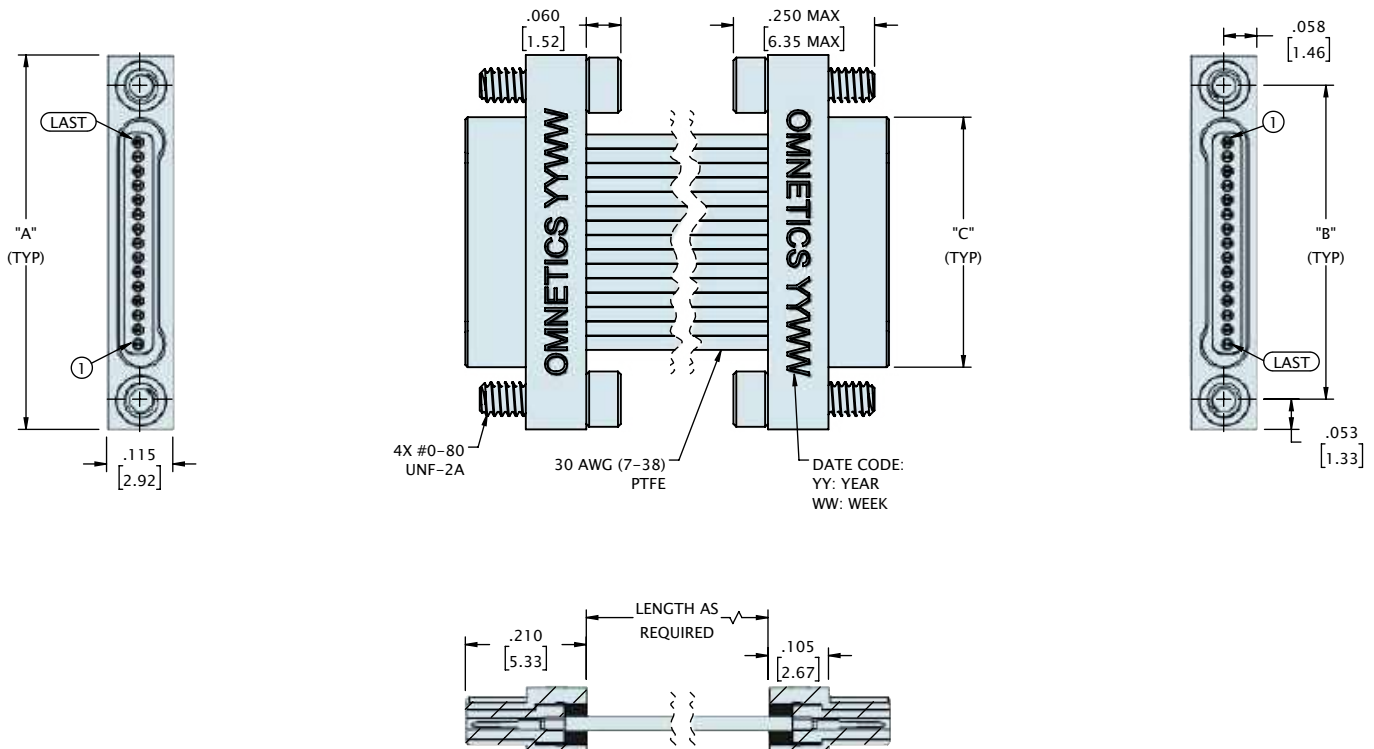
### Material Specifications

TYPE	PERFORMANCE
Contact	Copper Alloy Per MIL-DTL-32139
Contact Finish	Gold per ASTM B488, Type II, Class 1.27, Code C Over Nickel Underplate
Insulator	Thermoplastic per MIL-M-24519
Encapsulant	Epoxy

### Shell Options

TYPE	PERFORMANCE
Aluminum 6061	Electroless Nickel per SAE-AMS-2404
Stainless Steel, 300 Series	Passivated per SAE-AMS-2700

# SINGLE ROW MALE TO MALE JUMPERS (TYPE JUM)

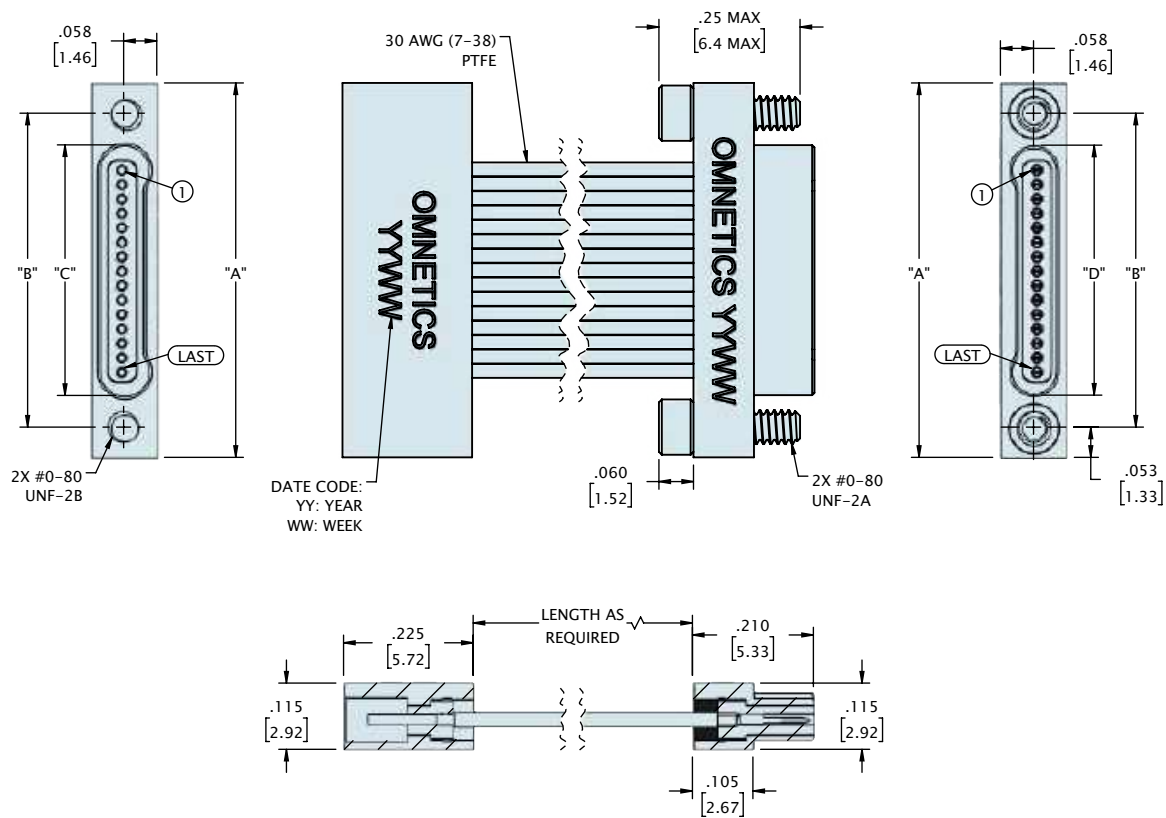


JACKSCREWS HIDDEN FOR CLARITY

CONTACTS	"A"	"B"	"C"
05	.400 [10.16]	.295 [7.49]	.184 [4.67]
09	.500 [12.70]	.395 [10.03]	.284 [7.21]
15	.650 [16.51]	.545 [13.84]	.434 [11.02]
21	.800 [20.32]	.695 [17.65]	.584 [14.83]
25	.900 [22.86]	.795 [20.19]	.684 [17.37]
31	1.050 [26.67]	.945 [24.00]	.834 [21.18]
37	1.200 [30.48]	1.095 [27.81]	.984 [24.99]
51	1.550 [39.37]	1.445 [36.70]	1.334 [33.88]

DIMENSIONS IN [ ] ARE IN MILLIMETERS AND ARE FOR REFERENCE ONLY

# SINGLE ROW MALE TO FEMALE JUMPERS (TYPE JUM)

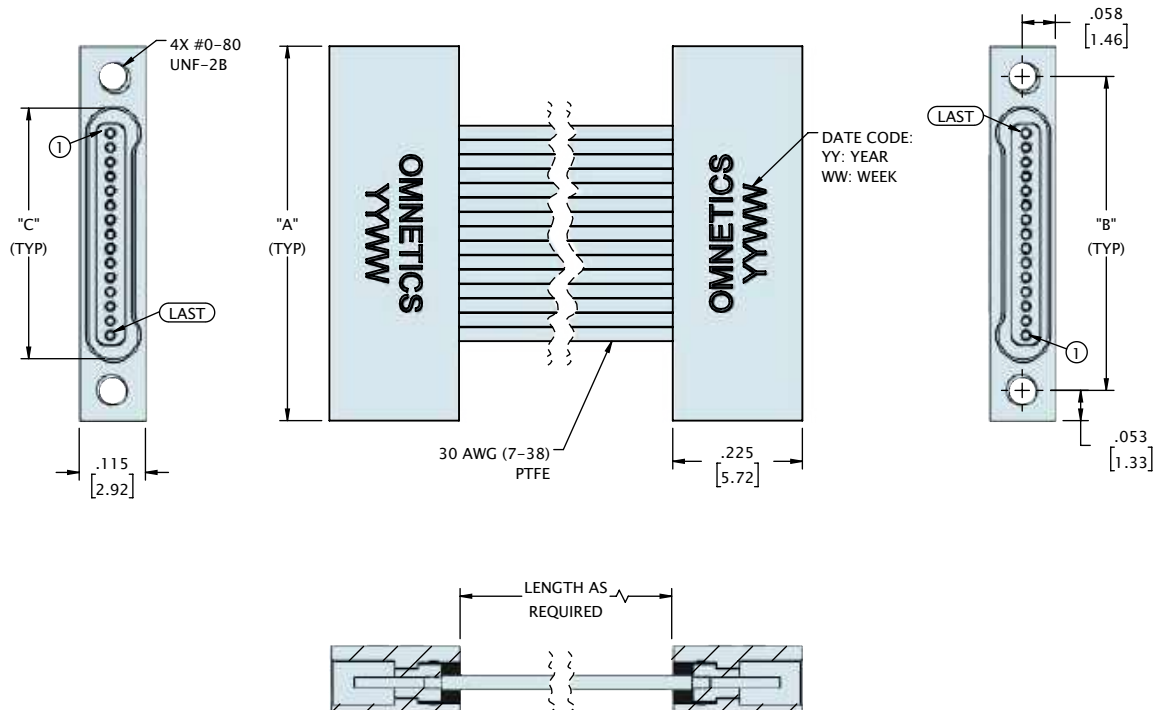
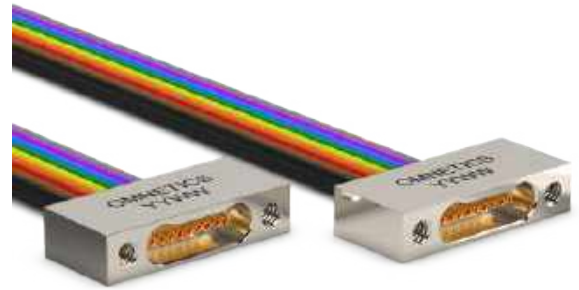
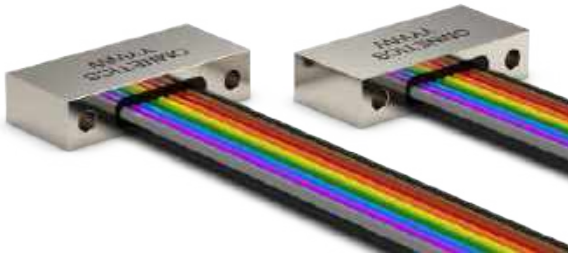


JACKSCREWS HIDDEN FOR CLARITY

CONTACTS	"A"	"B"	"C"	"D"
05	.400 [10.16]	.295 [7.49]	.185 [4.70]	.184 [4.67]
09	.500 [12.70]	.395 [10.03]	.285 [7.24]	.284 [7.21]
15	.650 [16.51]	.545 [13.84]	.435 [11.05]	.434 [11.02]
21	.800 [20.32]	.695 [17.65]	.585 [14.86]	.584 [14.83]
25	.900 [22.86]	.795 [20.19]	.685 [17.40]	.684 [17.37]
31	1.050 [26.67]	.945 [24.00]	.835 [21.21]	.834 [21.18]
37	1.200 [30.48]	1.095 [27.81]	.985 [25.02]	.984 [24.99]
51	1.550 [39.37]	1.445 [36.70]	1.335 [33.91]	1.334 [33.88]

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# SINGLE ROW FEMALE TO FEMALE JUMPERS (TYPE JUM)

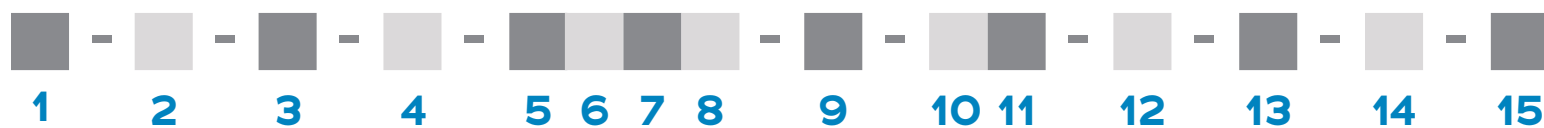


CONTACTS	"A"	"B"	"C"
05	.400 [10.16]	.295 [7.49]	.185 [4.70]
09	.500 [12.70]	.395 [10.03]	.285 [7.24]
15	.650 [16.51]	.545 [13.84]	.435 [11.05]
21	.800 [20.32]	.695 [17.65]	.585 [14.86]
25	.900 [22.86]	.795 [20.19]	.685 [17.40]
31	1.050 [26.67]	.945 [24.00]	.835 [21.21]
37	1.200 [30.48]	1.095 [27.81]	.985 [25.02]
51	1.550 [39.37]	1.445 [36.70]	1.335 [33.91]

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# SINGLE ROW JUMPERS (TYPE JUM)

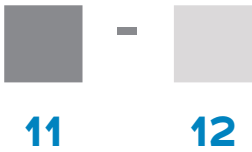
## ORDERING GUIDE



1	Series	JUM Jumpers											
2	Number Of Contacts	05	09	15	21	25	31	37	51				
3	Connector 1	MBPS Metal Bi-Lobe Pin Single Row						MBSS Metal Bi-Lobe Socket Single Row					
4	Connector 2	MBPS Metal Bi-Lobe Pin Single Row						MBSS Metal Bi-Lobe Socket Single Row					
5	Termination	WD Discrete Leadwire			WC Cable		WX Multiple Wire Types			TW Twisted Wires			
6	Wire AWG	0 30 AWG			2 32 AWG								
7	Wire Type	Q NEMA HP3			R M22759/11			S M22759/33			X Other Wire Types		
8	Wire Length	18.0					XX.X						
9	Color Coded	C 10 Repeating Colors Per MIL STD 681								Y All Other Wire Colors			
10	Shell / Material Finish	N Aluminum Shell, Electroless Nickel Plated						T Titanium Shell, Unplated					
		B Aluminium Shell, Black Anodized						CD Aluminium Shell, Cadmium Plated					
		BN Aluminium Shell, Black Nickel Plated						P Stainless Steel Shell, Passivated					
11	Hardware	See table page 101											
12	Common Options	See table page 101											
13	Shield / Jacket	D Slip On Metal Braid					E Machine Braid			F Flexo Braid			
		J Nomex Braid					ST Shrink Tube						
14	Mod Codes	M50 Space Grade Micro-D, SPT1						M53 Space Grade Micro-D, SPT2					
15	Special Instructions	YYY Describe anything that is not covered in standard options											



ORDERING GUIDE



11 Hardware

- 00 None, Ø .092 Hole (STD)
- 01 Fixed Jack-Posts (STD)
- 02 Jackscrews, STD Length, Hex Head (STD)
- 03 Jackscrews, STD Length, Slotted
- 04 Jackscrews, Long, Hex
- 05 Jackscrews, Long, Slotted
- 06 Float Mount, Front Mounted
- 07 Float Mount, Rear Mounted
- 08 Non-removable
- 13 Fixed Jackspots (STD)
- 14 Jackscrews STD Length, Hex Head (STD)
- 15 One set of each, Fixed Jackspots & Jackscrews, Standard Length, Hex Head (STD)
- YY Non Standard Hardware

12 Common Options

- |                               |                                 |
|-------------------------------|---------------------------------|
| ETH End Threaded Hole, #0-80  | EJS End Jack Screw              |
| HT High Temp. Epoxy           | RH RoHS Compliant               |
| FP Front Panel Mount          | SR Strain Relief                |
| CS Customer Supplied Material | RP Rear Panel Mount             |
| IS Inline Shell               | OR O-Ring                       |
| OM Overmold                   | BS1 Standard Straight Backshell |
| BS2 45 Oval                   | BS3 90/RA Oval                  |
| BS4 2 Piece BS                | BSY Custom Backshell            |