

ISO 9001:2000 **Ouality** Management **System**















We manufacture Custom and Standard Electrical Wire Connectors.

- On time delivery.
- Certified quality to the print.
- Priced to keep you coming back. **M**



ANY OUESTIONS?

Call Charles "Chas" Ridley to discuss your needs: 440-951-7186

ext. 103 Fax: 440-951-1071

e-mail: Charles Ridley: cRidley@ihinet.com

WAREHOUSE & ASSEMBLY

MFG. PLANT



MISSION STATEMENT

To be the industry leader in the application of custom made automatic, multiple rotating tool, transfer machining of non-ferrous extruded shapes for electrical connectors.

Our customers are medium to large volume manufacturers and distributors. We specialize in the Electrical Industry.

We provide:

- Design and Build of Special Equipment with which to serve our customers needs.
- Just-In-Time and Flexible Delivery Schedules for low, medium and high volume production.
- Certified Quality driven by computerized in-process SPC and ISO 9000 conformant quality systems.
- · Pricing combined with Service Levels, which provide value beyond our competitors' reach.
- Design-For-Manufacturing Engineering Services.
- Prototyping Services.
- Assembly services to our customers' requirements.
- UL and Canadian Standards pre-testing service laboratory.

The strategic advantage employed by IHI to achieve its mission: The Company employees' ability to conceive, design, build, program, tool, run, maintain and improve upon, specialized Computer Controlled Equipment optimized for machining and assembly of customers' low, medium and high volume parts.

The company applies this advantage in an atmosphere of competitive team spirit and of continuous improvement in safety, quality, cost reduction, and environmental. IHI recycles all waste fluids.

COMPANY PROFILE



1924 -2004

Incorporated in 1977 by founder and mathematics graduate Ned H Shiflett, (1924-2004) the business started operations in 1981. IHI initially produced hydraulic drilling and tapping self-feeder units and built special machinery for a variety of industrial customers. Using his prior experience in the electrical connector industry, Mr. Shiflett quickly established the Company as a custom machining house for electrical connectors. Having grown steadily since its first year of operations, IHI Connectors ® is now a valuable partnership resource for large and small OEM's and distributors requiring service and quality in a very competitively priced market sector. The Company operates in 32,000 square feet of plant and warehouse with about 50 employees.



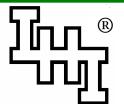
Charles Ridley joined the Company in 1993, and became Mr. Shiflett's partner in 1996. Bringing with him a BSME and a background in machine tools, manufacturing, and sales, IHI Connectors[®] is able to continue its thrust into advanced technology special machinery to serve its connector customers unusually well. Mr. Shiflett retired in 2002 after setting up IHI as an Employee Owned Company via an ESOP (Employee Stock Ownership Plan).

Materials: • Aluminum Alloys • Copper Alloys • Brass Alloys
Products: • Power Lugs • Fuse lugs • Box Connectors • Wire Splicers • Grounding lugs
• PCB to wire lugs • Power distribution Blocks Wire Sizes: 14 AWG to 1000 MCM

IHI Connectors ® International Hydraulics Inc.

7638 St. Clair Avenue, Mentor, 0H 44060-5236

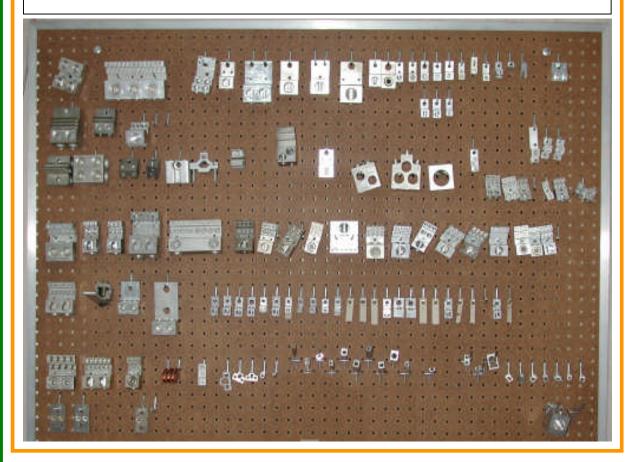
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(R)

SAMPLE BOARD OF TYPICAL IHI PRODUCTION CAPABILITY

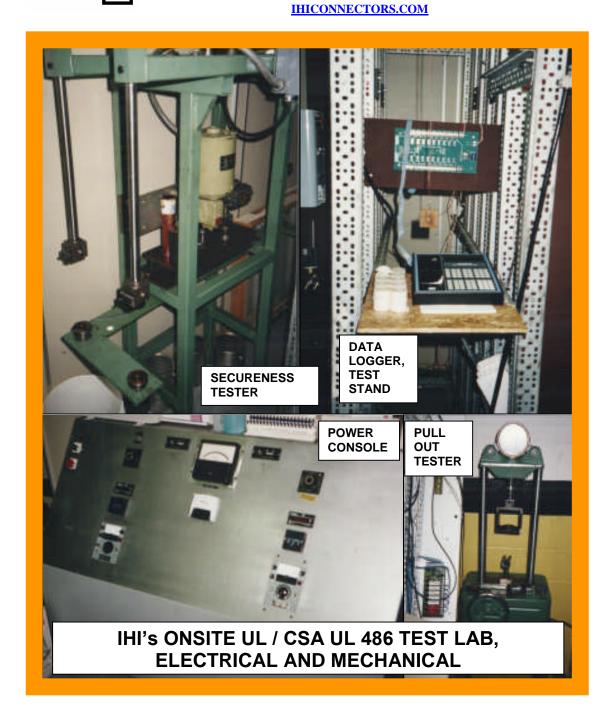


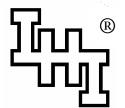
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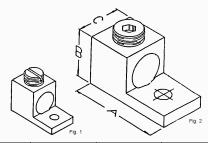




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S Series Lugs Tin Plated Aluminum for Single Copper or Aluminum Wires





Wire Range	Catalog Number	Fig. No.	A	В	С	Bolt Size
AWG 6-14	S 6	1	1-1/16	1/2	3/8	1/4
AWG 6-14	S6W	1	1-1/16	1/2	1/2	1/4
AWG 4 –14	S4	1	1-1/16	1/2	1/2	1/4
AWG 2 –14	S 2	1	1-5/32	9/16	1/2	1/4
AWG 1/0 -14	S 1/0	1	1-15/32	13/16	5/8	1/4
AWG 2/0 -14	S 2/0	1	1-15/32	13/16	5/8	1/4
250 MCM -6	S 250	2	2	1-1/16	29/32	5/16
300 MCM -6	S 300	2	2	1-1/16	29/32	5/16
350 MCM -6	S 350	2	2	1-1/8	1	5/16
500 MCM -6	S 500	2	2-3/4	1-1/2	1-3/8	3/8
600 MCM -4	S 600	2	2-3/4	1-1/2	1-3/8	3/8
750 MCM -4/0 *	S 750	2	3	1-1/2	1-7/16	5/16
800 MCM -300	S 800	2	2-15/16	1-15/16	1-5/8	5/8

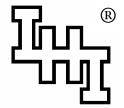
All are UL Listed and CSA Certified except (*) S750, UL listed only.

Standard and Custom Connectors

Materials: • Aluminum Alloys • Copper Alloys • Brass Alloys Mechanical Products: • Box Connectors • Splicers • Lugs Wire Sizes: 14 AWG to 1000 MCM

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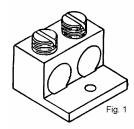
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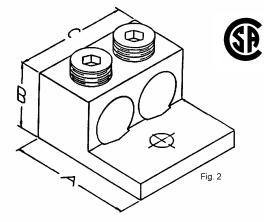




2S Series Lugs

Tin Plated Aluminum Lugs for two Copper or Aluminum wires





Wire Range	Catalog Number	Fig. No.	A	В	С	Bolt Size
AWG 1/0 -14	2S1/0	1	1-15/32	13/16	1-1/8	1/4
AWG 2/0 -14	2S2/0	1	1-15/32	13/16	1-9/16	1/4
250 MCM -6	2S250	2	2-9/16	1-3/16	1-5/8	3/8
350 MCM -6	2S350	2	2-7/8	1-1/4	1-15/16	1/2
500 MCM -6 *	2S500	2	3.5	1.75	2.22	1/2
600 MCM -4	2S600	2	3-1/8	1-9/16	2-3/8	1/2
600 MCM -4	2S600TP	2	3-1/8	1-9/16	2-3/8	1/2
750 MCM -1/0	2S750	2	3-1/2	1-11/16	2-5/8	1/2

^{*} UL Listed only, all others are UL Listed and CSA Certified. "TP" has Turn Prevent Rib on bottom

Standard and Custom Connectors

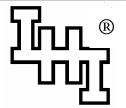
Materials: • Aluminum Alloys • Copper Alloys • Brass Alloys
Mechanical Products: • Box Connectors • Splicers • Lugs
Wire Sizes: 14 AWG to 1000 MCM

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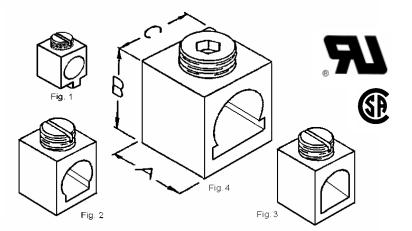
e-mail: Charles Ridley: <u>cRidley@ihinet.com</u>



IHICONNECTORS.COM ®

B Series Box (collar clamp) Connectors

Tin Plated Aluminum Box Connectors for Copper and Aluminum Wires. Buss (or PCB) mounted.



Wire Range	Catalog Number	Fig.	A	В	C	Buss (tang)	PCB
		No.				Width	solderable?
AWG 12 -16 #	B12	3	.310	.45	.26	.13	YES, option
AWG 6-18 *	B6A	1	.338	.49	.34	.14 PCB slot	YES, Standard
AWG 6-14	B6B	2	.343	.53	.38	.22	
AWG 6-16#	B6C	2	.406	.56	.42	.25	
AWG 4 –14	B4B @	3	.48	.55	.46	.2530	Option
AWG 2 –14	B2A	2	.406	.56	.42	.25	YES, option
AWG 2 –14 #	B2B	3	.490	.58	.465	.324	
AWG 2 –14	B2C	2	.406	.66	.465	.25	YES, option
AWG 1/0 - 8**	B1/0	3	.625	.72	.565	.37	
300 MCM – 4 #	B300	4	.937	1.203	.795	.639	

(# UL Recognized only)

(** c CSA us marked for USA & Canada)

(* No UL/CSA.)

@ B4B is made of brass with a steel or brass screw

Materials: • Aluminum Alloys • Copper Alloys • Brass Alloys
Mechanical Products: • Box Connectors • Splicers • Lugs
Wire Sizes: 14 AWG to 1000 MCM
Call Charles Ridley (ext. 103)

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IHI COLLAR (BOX) CONNECTORS FOR BUSS MOUNT OR PCB MOUNT CONNECT WIRE TO A BUSS OR A PRINTED CIRCUIT BOARD

Sales Cat No. / Material	Wire Range	UL Cat No.	CSA Cat No.	Buss Size	Buss Supplied by/ Mat'l	Max Amps NEC 75C	Temp Rate	Wire Hole Dia/ box	Screw Mat'l /size	Max Screw Torque In-lbs
B300	300–4	B300	-	.63 x	User	Cu 285A	75 C	.64/.67	Alum	200
Alum				.25	alum				5/8	
B1/0	1/0-8	B1/0	B1/0	.36 x	User	150A	90C	.40	Alum	100
Alum		@		.064	Copper			/.40+	7/16	
B2A	2-14	B2	B2	.24 x	User	115A	75 C	.30	Steel	50
Alum				.04	cu/alloy				5/16	
B2A	2-14	B2	-	.25 x	User	50A	75 C	.30	Steel	50
Alum				.032	cu/alloy				5/16	
B2A-PCB	2-14	B2	B2	.24 x	IHI	115A*	75 C	.30	Steel	50
Alum				.05	copper				5/16	
B2A1	2-16	B2A1	B2A1	.25 x	User	50A	90 C	.30	Alum	50
Alum			#	.047	cu/alloy				5/16	
B2A2	2-16	B2A2	B2A2	.25 x	User	115A	90 C	.30	Alum	50
Alum			#	.032	cu/alloy				5/16	
B2A2-PCB	2-16	B2A2	B2A2	.24 x	IHI	115A*	90 C	.30	Alum	50
Alum			#	.04	copper				5/16	
B2B	2-14	B2B		.312 x	User	65A	90 C	.324/	Steel	50
Alum				.045	cu/alloy			.37	3/8	
B2B-PCB	2-14	B2B		.312 x	User	65A*	90 C	.324/	Steel	50
Alum				.045	cu/alloy			.37	3/8	
B2C	2-14	B2C	B2C	.24 x	User	115A	75 C	.324/	Steel/SS	50
Alum				.04	cu/alloy			.37	5/16	
B2C-PCB	2-14	B2C	B2C	.24 x	IHI	115A*	75 C	.324/	Steel/SS	50
Alum				.05	Copper			.36	5/16	
B4B	4-14	B4B	B4B	.25 x	User	85A	90 C	.32/	Stl/Brs	45
Brass		@		.063	cu/alloy			.35	3/8	
B6-PCB	6-18			.34 x	IHI	35A*	(75 C)	.21	Steel/SS	25
Alum				.14	integral				#12	
B6B Alum	6-14	B6B	B6B	.20 x	User	65A	75 C	.22	Steel	35
				.032	cu/alloy				1/4	
B12	12-16	B12		.125 x	User/IHI	20A	75 C	.15	Steel	20
Alum	cu			.063	cu/alloy				#10 fill	

^{1.} Parts with -PCB suffix are printed circuit board wave solderable. SS = Stainless Steel screw available.

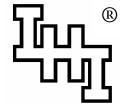
Canadian 22.2 Certification is by UL via the "cUR" mark. -- No UL or No CSA approval available at date of printing.

IHI Connectors ®, International Hydraulics Inc.
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Call Charles Ridley (ext. 103) 440-951-7186 Fax 440-951-1071

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^{2.} IHI can provide quote on providing buss where it is non-stock. UL Recognition and CSA Certification may be added on request where it is not currently available. @ UL 486 tested by CSA under cCSAus mark.

^{*}Printed circuit application involving soldered joints may require a lower working temperature and therefore a lower maximum current based on the application and testing by the user. Anchoring strength is investigated by user.



IHICONNECTORS.COM ®

2-14 AWG B2A-PCB & B2C-PCB SOLDERABLE Connectors
Tin Plated Aluminum Box Connector for Copper and
Aluminum Wires
PCB WAVE SOLDERABLE USING COPPER BUSS





HEX SOCKET SCREW OPTION SLOT STANDARD





PCB!

B2C-PCB VERSION-





Standard and Custom Connectors

Materials: • Aluminum Alloys • Copper Alloys • Brass Alloys

Mechanical Products: • Box Connectors • Splicers • Lugs

Wire Sizes: 14 AWG to 1000 MCM Any Ouestions?

Call (Charles Ridley (ext. 103)

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12-16 AWG
B12 or
B12-PCB
Connector
Tin plated
Aluminum Box
Connector for
Copper Wires.
Steel Screw



!R!

Wire Range	Sales Catalog	Depth	Height	Width	Buss Width
Copper only	no.				
AWG 12 –16	B12 (-PCB)	.31	.45	.26	.125140 in.

Standard and Custom Connectors

Materials: • Aluminum Alloys • Copper Alloys • Brass Alloys Mechanical Products: • Box Connectors • Splicers • Lugs

Wire Sizes: 14 AWG to 1000 MCM ANY OUESTIONS?

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e-mail: Charles Ridley: cRidley@ihinet.com

4-14 AWG B4B Connector Unplated High Copper Alloy Box Connector for Copper Wires. Brass or Steel Screw





Wire Range	Sales Catalog	Depth	Height	Width	Buss Width
Copper only	no.				(User supplied)
AWG 4 –14	B4B	.48	.55	.46	.2530 in.

Standard and Custom Connectors

Materials: • Aluminum Alloys • Copper Alloys • Brass Alloys Mechanical Products: • Box Connectors • Splicers • Lugs

Wire Sizes: 14 AWG to 1000 MCM
ANY OUESTIONS?

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IHI CONNECTORS ®, International Hydraulics Inc. 7638 St. Clair Avenue. Mentor. OH 44060-5236



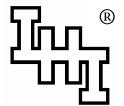
B2A-PCB & B2C-PCB Printed Circuit Board Mounted Connectors

The B2A-PCB & B2C-PCB are sturdy, mechanical, screw type compression wire connectors. The copper "buss staple" at the bottom is designed to be inserted into two slots in the printed circuit board. The connectors can be used on .06" or .09" or .12" thick boards (leg is .13" high). Wave solderable, these connectors are aimed at 60-100 amp applications. Actual currents depend on mounted heat flow characteristics. Each application should be tested as constructed. Though rated the same, the B2C-PCB is larger in size and wire hole capacity.

- 1. Material is 6061-T6 aluminum, which is triple plated for corrosion resistance.
- 2. Aluminum has excellent heat dissipation characteristics and conductivity.
- 3. Buss staple and box connector have low thermal "inertia" which is compatible with <u>wave soldering.</u>
- 4. Plating type: Box: tin on copper on zinc. Buss staple: dull tin on copper.
- 5. Solderability testing can be offered to any special requirements.
- 6. Parts is supplied with a steel (zinc plated) screw. Option is an aluminum screw (tin plated).
- 7. Connector is UL recognized for 115 Amps AL7CU (75C°) rating with .047" buss supplied subject to UL approval of final PCB assembly. AL9CU (90C°) rating available with an aluminum screw.
- 8. B2A & B2C-PCB are AWG 2 to 14 capacity. Connectors with other capacities can be quoted.
- Wire retaining screw torque for the 5/16 screw is 50 inch-pounds (UL standard for this screw).
 Mounted to a typical board, the soldered joint can withstand multiple 60 inch-pounds torque applications.
- 10. Typical torque applied by an AWG 2 coarse stranded wire when forcibly bent while attached to a B2A/B2C-PCB is under 35 inch-pounds. (7strands x 0.1 dia.).
- 11. Other connectors can be custom made to meet customer specifications.

Customers should fully investigate the soldered interface with their PC board for adequate strength including (but not limited to) analysis of effects at anticipated operating temperatures, weight of hanging wires on creep strength, number of torque cycles on wire retention screw and thermal cycling effects on soldered interface. While standard property data and test data can be provided, no responsibility whatsoever will be taken for the mounted connector. IHI will however supply parts in accordance with agreed dimensions and specifications. Depending on long term storage conditions, solderability may be reduced over time.

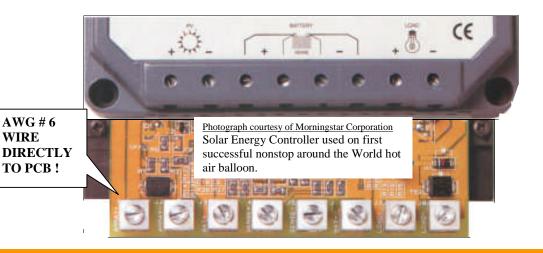
Phone: 440-951-7186 ext 103 Fax: 440-951-1071 email: cridley@ihinet.com



IHICONNECTORS.COM ®

6 AWG Wire Connector with Stainless Steel Screw





Standard and Custom Connectors

Materials: • Aluminum Alloys • Copper Alloys • Brass Alloys

Mechanical Products: • Box Connectors • Splicers • Lugs

Wire Sizes: 14 AWG to 1000 MCM

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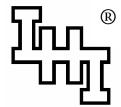
B6A-PCB Printed Circuit Board Mounted Connector

The "foot" is designed to be inserted into a slot in the printed circuit board. The connector can be used on .06" or .09" thick boards (foot is .10" high). Wave solderable.

- 1. Material is 6061 aluminum, which is triple plated for guaranteed solderability.
- 2. Aluminum has excellent heat dissipation characteristics.
- 3. Aluminum has low thermal mass, which is compatible with wave soldering.
- 4. Plating comprises: Tin bath dip on nickel on zinc.
- 5. Solderability testing can be set up to any special requirements can be offered.
- 6. Parts can be supplied with or without screws.
- 7. UL / CSA testing, if required, can be offered.
- 8. B6A-PCB is AWG 6. Connectors with AWG 2 capacity (B2A-PCB) and larger can be quoted.
- 9. Typical wire retaining screw torque for a 12-32 screw is 20 inch-pounds.
- 10. Typical torque applied by an AWG 6 stranded wire when forcibly bent while attached to a B6A-PCB is under 10 inch-pounds.
- 11. Other connectors can be custom made to meet customer specifications.
- 12. Operating limits for a typical customer application have been tested at: -90 C to +95 C . 6 axis vibration test at 20 C 45 grams.

Customers should fully investigate the soldered interface with their PC board for adequate strength including (but not limited to) analysis of effects at anticipated operating temperatures, weight of hanging wires on creep strength, number of torque cycles on wire retention screw and thermal cycling effects on soldered interface. While standard property data and test data can be provided, no responsibility whatsoever will be taken for the mounted connector. IHI will however supply parts in accordance with agreed dimensions and specifications. Depending on long-term storage conditions, solderability may be reduced over time.

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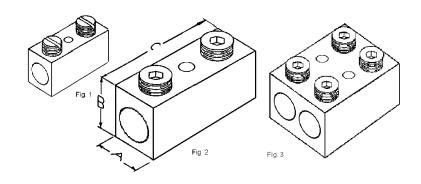


<u>IHICONNECTORS.COM</u>®



P Series Splicer / Reducer

Tin Plated Aluminum Splicers for Copper and Aluminum Wires



Wire Range	Catalog Number	Fig. No.	A	В	C	Mtg. Hole
AWG 4 -14	P4	1	.375	.484	1.01	None
AWG 2 -14	P2	1	.450	.562	1.219	.218
AWG 2/0 -8	P2/0	2	.562	.703	1.59	.200
500 MCM -6	P500	2	1.14	1.25	2.75	.174 /.25
500 MCM -6	2P500	3	2.218	1.5	2.5	.167

Standard and Custom Connectors

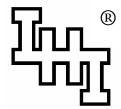
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Mechanical Products: • Box Connectors • Splicers • Lugs
Wire Sizes: 14 AWG to 1000 MCM

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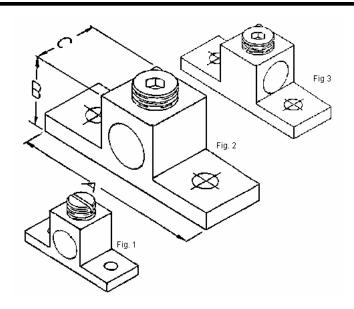


IHICONNECTORS.COM ®



T Series Lugs

Tin Plated Aluminum for Single Copper or Aluminum Wires



Wire Range	Catalog Number	Fig. No.	A	В	C	Bolt Size
AWG 2/0 -8	T2/0	2	1-11/16	0.9	5/8	#10
AWG 2/0 -14	T2/0A	3	1-11/16	0.9	5/8	#10
Other Sizes	Consult Factory	1, 2, 3				

Standard and Custom Connectors

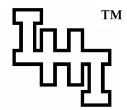
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Mechanical Products: • Box Connectors • Splicers • Lugs
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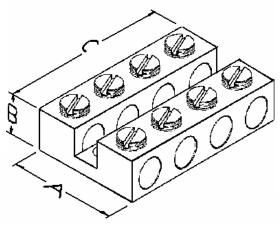
e-mail: Charles Ridley: cRidley@ihinet.com



WWW.IHICONNECTORS.COM ®

N Series Dual Neutral Bars Tin Plated Aluminum

for Copper and Aluminum **Conductors**



- **Built in wire stops**
- More compact than single bars
- No holes lost for mounting screws
- No additional mounting block required for dual bars

Wire Range	Catalog Number	No. of	A	В	С	Mtg. Holes
		Poles				Diameter
AWG 4 -14	N4 – No. of Poles	1 to 20	.94	.44	(No. of Poles x $.30$) + $.05$.21
AWG 2 -14	N2 – No. of Poles	1 to 20	1.07	.50	(No. of Poles x $.36$) + $.07$.21

Standard and Custom Connectors

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