

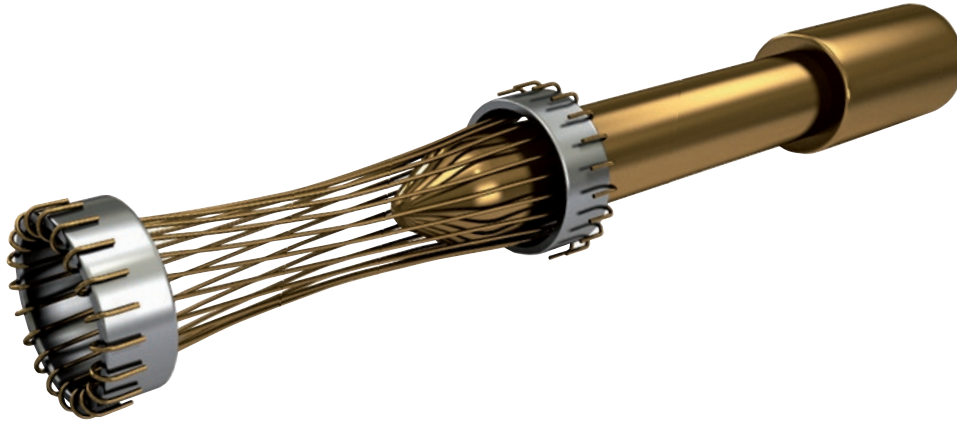
# L SERIES

*Rugged High Density Modular Connectors*



# HYPERBOLOID TECHNOLOGY

Smiths Connectors offers an extensive range of superior contact technologies suitable for standard and custom solutions. Hypertac® (HYPERboloid conTACT) is the original superior performing hyperboloid contact technology designed for use in all applications and in harsh and demanding environments where high reliability and safety are critical. The inherent electrical and mechanical characteristics of the Hypertac hyperboloid contact ensures unrivalled performance in terms of reliability, number of mating cycles, low contact force and minimal contact resistance. The shape of the contact sleeve is formed by hyperbolically arranged contact wires, which align themselves elastically as contact lines around the pin, providing a number of linear contact paths.



## FEATURES

### LOW INSERTION/EXTRACTION FORCES

The angle of the socket wires allows tight control of the pin insertion and extraction forces. The spring wires are smoothly deflected to make line contact with the pin.

### LONG CONTACT LIFE

The smooth and light wiping action minimizes wear on the contact surfaces. Contacts perform up to 100,000 insertion/extraction cycles with minimal degradation in performance.

### LOWER CONTACT RESISTANCE

The design provides a far greater contact area and the wiping action of the wires insures a clean and polished contact surface. Our contact technology has half the resistance of conventional contact designs.

### HIGHER CURRENT RATINGS

The design parameters of the contact (e.g., the number, diameter and angle of the wires) may be modified for any requirement. The number of wires can be increased so the contact area is distributed over a larger surface. Thus, the high current carried by each wire because of its intimate line contact, can be multiplied many times.

### IMMUNITY TO SHOCK & VIBRATION

The low mass and resultant low inertia of the wires enable them to follow the most abrupt or extreme excursions of the pin without loss of contact. The contact area extends 360 degrees around the pin and is uniform over its entire length. The 3 dimensional symmetry of the Hypertac contact design guarantees electrical continuity in all circumstances.

## BENEFITS

### HIGH DENSITY INTERCONNECT SYSTEMS

Significant reductions in size and weight of sub-system designs. No additional hardware is required to overcome mating and un-mating forces.

### LOW COST OF OWNERSHIP

The Hypertac contact technology will surpass most product requirements, thus eliminating the burden and cost of having to replace the connector or the entire subsystem.

### LOW POWER CONSUMPTION

The lower contact resistance of our technology results in a lower voltage drop across the connector reducing the power consumption and heat generation within the system.

### MAXIMUM CONTACT PERFORMANCE

The lower contact resistance of the Hypertac contact reduces heat build-up; therefore Hypertac contacts are able to handle far greater current in smaller contact assemblies without the detrimental effects of high temperature.

### RELIABILITY UNDER HARSH ENVIRONMENTS

Harsh environmental conditions require connectors that will sustain their electrical integrity even under the most demanding conditions such as shock and vibration. The Hypertac contact provides unmatched stability in demanding environments when failure is not an option.

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### FEATURES & BENEFITS

- ▶ **Low insertion / extraction forces**
- ▶ **High density interconnect systems**
- ▶ **Reliability in harsh environments**
  - ▶ Immune to shock and vibration
  - ▶ Long contact life
  - ▶ Minimal contact resistance
  - ▶ Efficient power consumption
- ▶ **High current ratings**
- ▶ **Low cost of ownership**
- ▶ **Design flexibility**
  - ▶ Metal back shells / plastic hoods
  - ▶ Building block system composed of custom module combinations within a connector frame
  - ▶ Signal, power and coaxial contact types available
  - ▶ Fixed and snap-in versions
  - ▶ Jackscrews available for half-turn quick disconnect
- ▶ **Cable to panel & rack and panel applications**

### FIXED CONTACTS

MODULE	CONTACTS	AMPERAGE
<b>TYPE A</b>	5	8 A
<b>TYPE B</b>	3	15 A
<b>TYPE C</b>	2	25 A
<b>TYPE D</b>	17	8 A
<b>TYPE M</b>	2	50 A

### SNAP-IN CRIMP CONTACTS

MODULE	CONTACTS	AMPERAGE
<b>TYPE G</b>	1	200 A
<b>TYPE K</b>	1	100 A
<b>TYPE R</b>	5	8 A
<b>TYPE S</b>	3	15 A
<b>TYPE U</b>	2	25 & 50 A
<b>TYPE V</b>	3	25 A
<b>TYPE V</b>	3 Coaxial	—
<b>TYPE W</b>	30	4 A

# L SERIES CONNECTORS

Smiths Connectors' L Series rugged high density modular connectors employ a do-it-yourself system based on the principle of building blocks. The L Series system is composed of two elements: modules and frames. Modules of various styles and contact types, including signal, power and coaxial, can be combined into custom arrangements within a single connector frame. This allows the user to build a connector that addresses and fulfills their exact requirements with off-the-shelf components.

Ideal for rugged and rack & panel applications, L Series connectors utilize the unparalleled performance of Hypertac® hyperboloid contact technology to provide high cycle life, low insertion/extraction forces and immunity to shock and vibration. This ensures smooth and easy mating with maximum performance in connectors with numerous contacts.

The contacts are mounted in small plastic blocks and are removable for easy assembly and repair. The frames which hold the modules in position range from basic, only consisting of two side rails and end caps, to more complex, including Jackscrews, hoods and cable clamps. To conform to almost any combination of modules, all frames are available in numerous lengths. With the L Series, specially designed connectors can be purchased quickly and inexpensively, eliminating the need for custom tooling.



## HOW TO ORDER



1 ▶ L SERIES [Fixed]

2 ▶ INSULATOR

**P** PLUG    **E** RECEPTACLE

3 ▶ FRAME TYPE

**A** FRAME A    **B** FRAME B    **BV** FRAME BV    **H** FRAME H  
**J** FRAME J    **JV** FRAME JV    **MV** FRAME MV    **MY** FRAME MY

4 ▶ FRAME LENGTH

**4** TO **20** UNITS<sup>(2)</sup>

Frame length is computed by multiplying the module units by module quantity and totaling the results.  
 Apply 2 additional units for frames with Jackscrews.

5 ▶ MODULE QUANTITY + PART NUMBER

**4** + **AMST** / **2** + **CHT** /

Amount of same modules together within frame. (Drop "L" from beginning of module part number, see pg. 14 for all module part numbers). Example: 4AMST = 4 of the (L)AMST style modules.  
 Separate each series of modules by "/". Modules will be positioned in frame according to sequence listed.

6 ▶ PLATING

**TG** 10 µin GOLD OVER NICKEL    **TH** 20 µin GOLD OVER NICKEL

**TAH** 50 µin GOLD OVER NICKEL

7 ▶ CABLE CLAMP & SIZE<sup>(3)</sup> (J & JV frames only)

**SC10** 0.394 [10.00] MAX, 0.210 [5.35] MIN    **SC15** 0.590 [15.00] MAX, 0.385 [9.75] MIN

**SC20** 0.787 [20.00] MAX, 0.605 [15.25] MIN    **SC24** 0.945 [24.00] MAX, 0.670 [17.00] MIN

8 ▶ CABLE CLAMP LOCATION

**L** LEFT    **R** RIGHT    **F** FRONT    **B** BACK

Omit for default locations. (J/JV: Top, K/KV: Front, MV/MY: As Shown)

## Notes:

1) If part number exceeds 24 characters, a special abbreviated part number will be assigned at the time of order.

2) Frames MV and MY available in 12, 15, 20 and 22 units only.

3) May be some limitations on cable clamp size in connectors of shorter length.

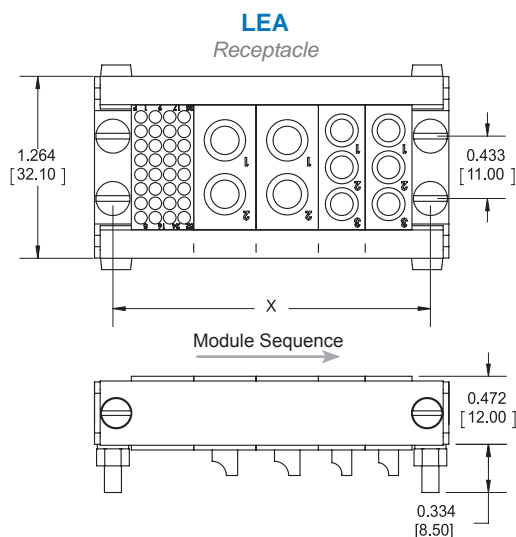
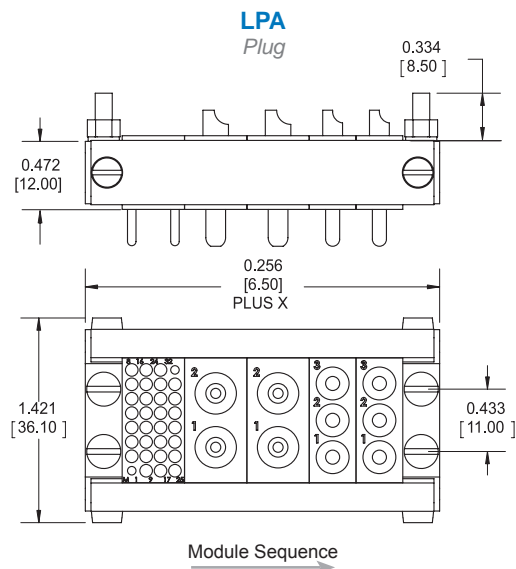
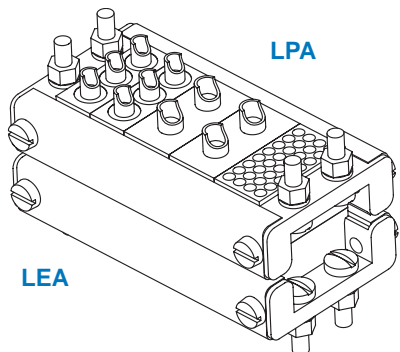
Dimensions are in inches [mm].

# FRAMES

## Dimensions & Specifications

### FRAME A

Simple Rack & Panel

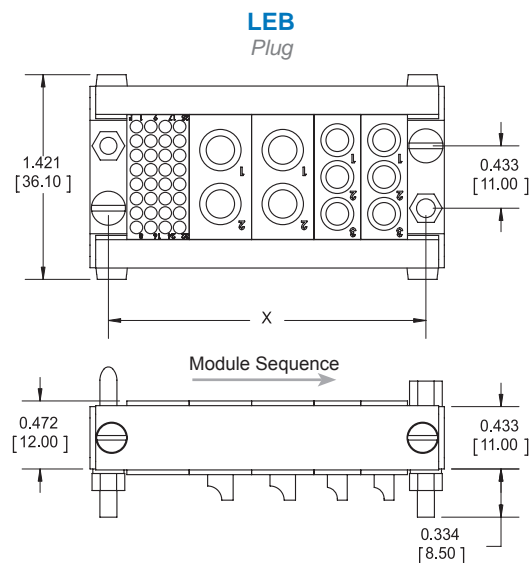
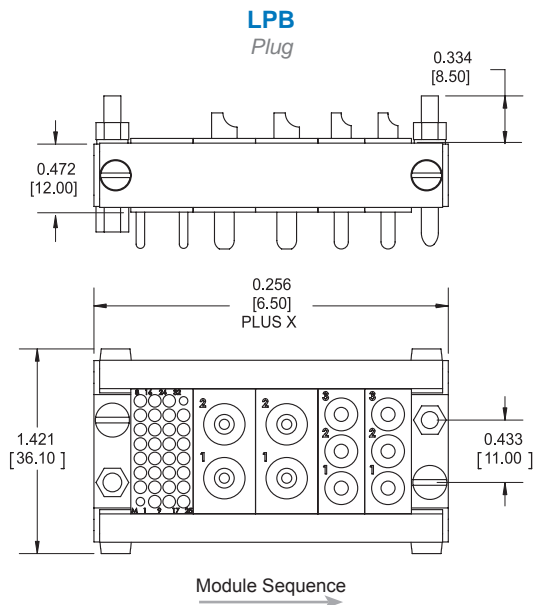
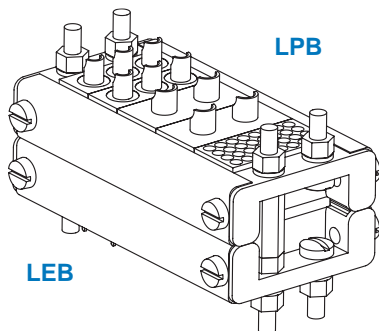


UNITS	X	PLUG	RECEPTACLE
4	1.122 [28.50]	LPA4	LEA4
5	1.338 [34.00]	LPA5	LEA5
6	1.555 [39.50]	LPA6	LEA6
7	1.771 [45.00]	LPA7	LEA7
8	1.988 [50.50]	LPA8	LEA8
9	2.205 [56.00]	LPA9	LEA9
10	2.421 [61.50]	LPA10	LEA10
11	2.638 [67.00]	LPA11	LEA11
12	2.854 [72.50]	LPA12	LEA12
13	3.070 [78.00]	LPA13	LEA13
14	3.287 [83.50]	LPA14	LEA14
15	3.504 [89.00]	LPA15	LEA15
16	3.720 [94.50]	LPA16	LEA16
17	3.936 [100.00]	LPA17	LEA17
18	4.153 [105.50]	LPA18	LEA18
19	4.370 [111.00]	LPA19	LEA19
20	4.586 [116.50]	LPA20	LEA20

WEIGHT (Excluding Modules)	
A Plug	1.0 oz. at 4 units
	1.9 oz. at 20 units
A Receptacle	1.0 oz. at 4 units
	1.9 oz. at 20 units

## ► FRAME B

Simple Rack & Panel with Guides

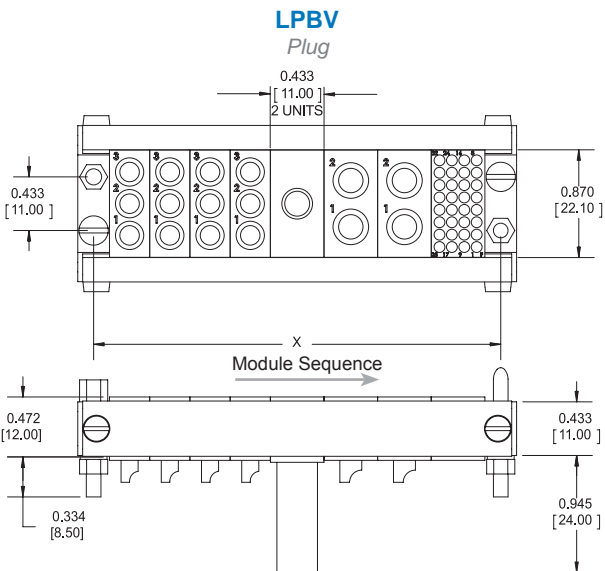
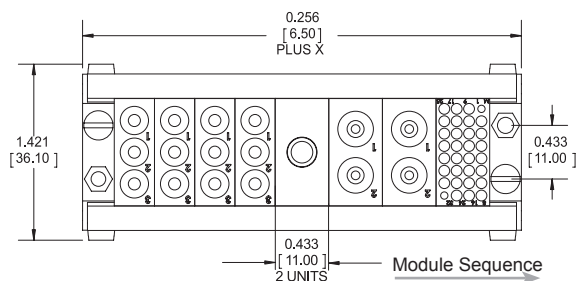
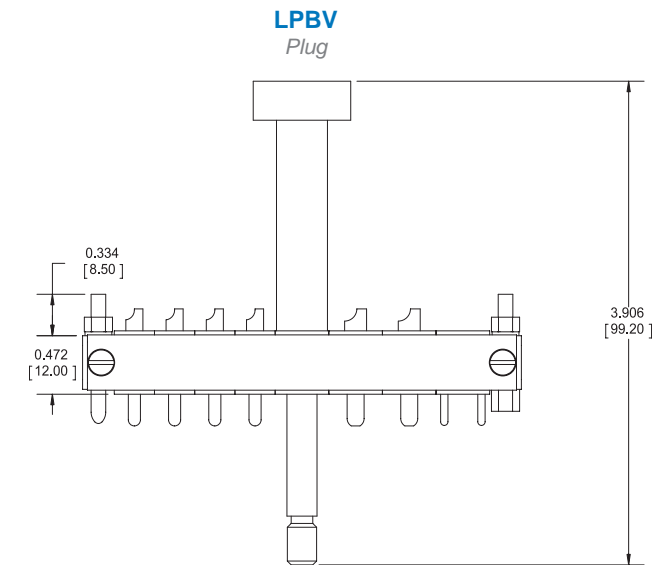
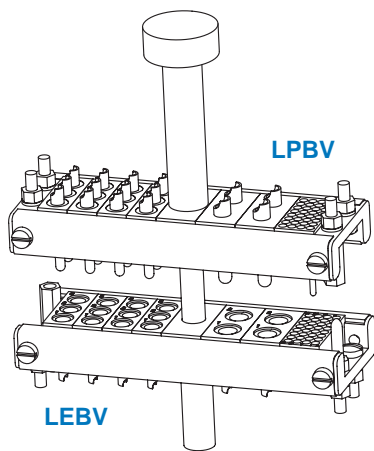


UNITS	X	PLUG	RECEPTACLE
4	1.122 [28.50]	LPB4	LEB4
5	1.338 [34.00]	LPB5	LEB5
6	1.555 [39.50]	LPB6	LEB6
7	1.771 [45.00]	LPB7	LEB7
8	1.988 [50.50]	LPB8	LEB8
9	2.205 [56.00]	LPB9	LEB9
10	2.421 [61.50]	LPB10	LEB10
11	2.638 [67.00]	LPB11	LEB11
12	2.854 [72.50]	LPB12	LEB12
13	3.070 [78.00]	LPB13	LEB13
14	3.287 [83.50]	LPB14	LEB14
15	3.504 [89.00]	LPB15	LEB15
16	3.720 [94.50]	LPB16	LEB16
17	3.936 [100.00]	LPB17	LEB17
18	4.153 [105.50]	LPB18	LEB18
19	4.370 [111.00]	LPB19	LEB19
20	4.586 [116.50]	LPB20	LEHB20

WEIGHT (Excluding Modules)	
<b>B Plug</b>	1.0 oz. at 4 units
	1.9 oz. at 20 units
<b>B Receptacle</b>	1.0 oz. at 4 units
	1.9 oz. at 20 units

► **FRAME BV**

Rack & Panel with Guides and Jackscrew



UNITS	X	PLUG	RECEPTACLE
4	1.122 [28.50]	LPBV4	LEBV4
5	1.338 [34.00]	LPBV5	LEBV5
6	1.555 [39.50]	LPBV6	LEBV6
7	1.771 [45.00]	LPBV7	LEBV7
8	1.988 [50.50]	LPBV8	LEBV8
9	2.205 [56.00]	LPBV9	LEBV9
10	2.421 [61.50]	LPBV10	LEBV10
11	2.638 [67.00]	LPBV11	LEBV11
12	2.854 [72.50]	LPBV12	LEBV12
13	3.070 [78.00]	LPBV13	LEBV13
14	3.287 [83.50]	LPBV14	LEBV14
15	3.504 [89.00]	LPBV15	LEBV15
16	3.720 [94.50]	LPBV16	LEBV16
17	3.936 [100.00]	LPBV17	LEBV17
18	4.153 [105.50]	LPBV18	LEBV18
19	4.370 [111.00]	LPBV19	LEBV19
20	4.586 [116.50]	LPBV20	LEBV20

WEIGHT (Excluding Modules)	
<b>BV Plug</b>	4.7 oz. at 4 units 5.6 oz. at 20 units
<b>BV Receptacle</b>	2.5 oz. at 4 units 3.4 oz. at 20 units

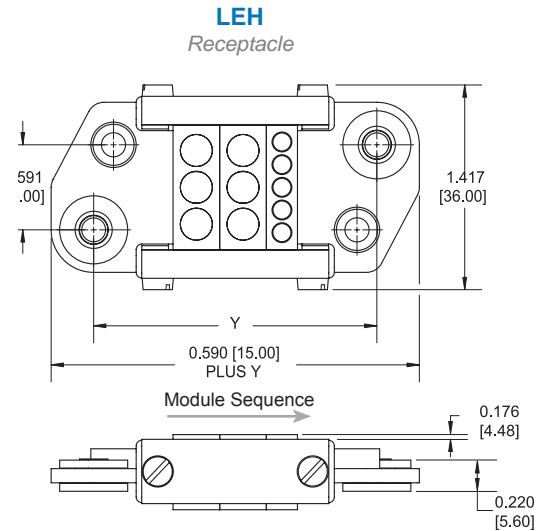
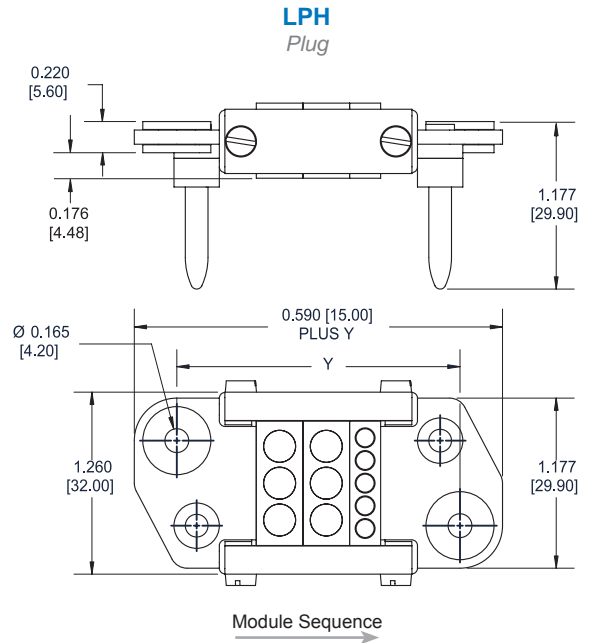
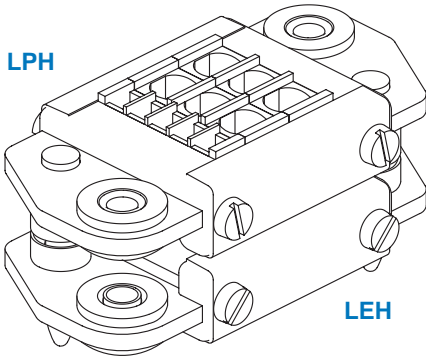


## ▶ FRAME H

### Rack and Panel with Guides

Float mounting 0.049 [1.25]<sup>2</sup> max. from center

**UL**® File No.: UL E102195



UNITS	Y	PLUG	RECEPTACLE
4	1.969 [50.00]	LPH4	LEH4
5	2.185 [55.50]	LPH5	LEH5
6	2.402 [61.00]	LPH6	LEH6
7	2.618 [66.50]	LPH7	LEH7
8	2.835 [72.00]	LPH8	LEH8
9	3.051 [77.50]	LPH9	LEH9
10	3.268 [83.00]	LPH10	LEH10
11	3.484 [88.50]	LPH11	LEH11
12	3.701 [94.00]	LPH12	LEH12
13	3.917 [99.50]	LPH13	LEH13
14	4.134 [105.00]	LPH14	LEH14
15	4.350 [110.50]	LPH15	LEH15
16	4.567 [116.00]	LPH16	LEH16
17	4.784 [121.50]	LPH17	LEH17
18	5.00 [127.00]	LPH18	LEH18
19	5.217 [132.50]	LPH19	LEH19
20	5.433 [138.00]	LPH20	LEH20
21	5.650 [143.50]	LPH21	LEH21
22	5.866 [149.00]	LPH22	LEH22

### WEIGHT (Excluding Modules)

<b>H Plug</b>	1.9 oz. at 4 units 2.8 oz. at 20 units
<b>H Receptacle</b>	1.6 oz. at 4 units 2.5 oz. at 20 units

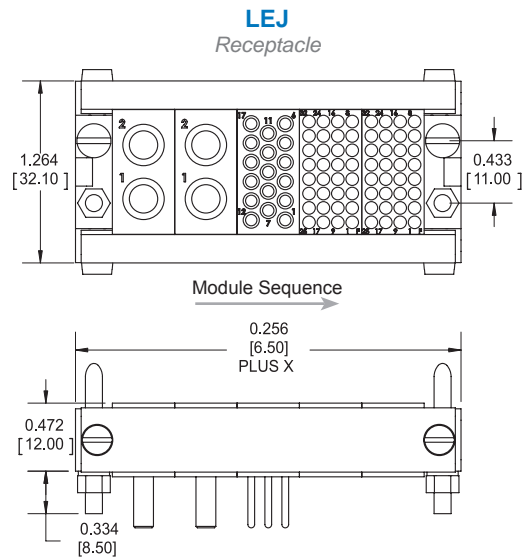
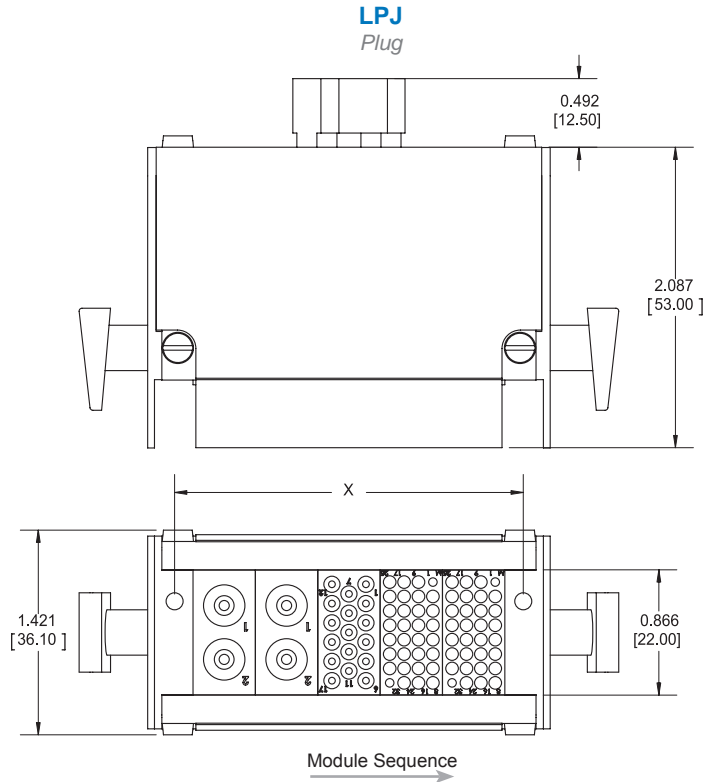
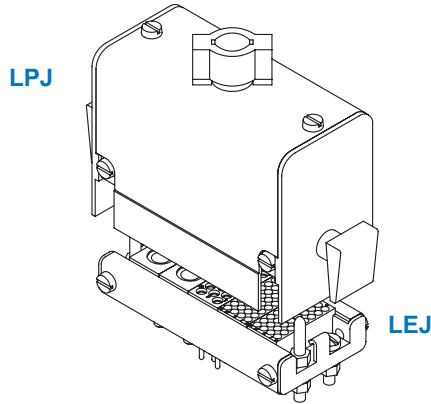
### Notes:

1) Available option: 0.125 in. float (use modification 398).  
Dimensions are in inches [mm].

► **FRAME J**

Metal Backshell

- ▶ Hooded connector with round cable clamp
- ▶ Alternate cable clamp locations available



UNITS	X	PLUG	RECEPTACLE
4	1.122 [28.50]	LPJ4	LEJ4
5	1.338 [34.00]	LPJ5	LEJ5
6	1.555 [39.50]	LPJ6	LEJ6
7	1.771 [45.00]	LPJ7	LEJ7
8	1.988 [50.50]	LPJ8	LEJ8
9	2.205 [56.00]	LPJ9	LEJ9
10	2.421 [61.50]	LPJ10	LEJ10
11	2.638 [67.00]	LPJ11	LEJ11
12	2.854 [72.50]	LPJ12	LEJ12
13	3.070 [78.00]	LPJ13	LEJ13
14	3.287 [83.50]	LPJ14	LEJ14
15	3.504 [89.00]	LPJ15	LEJ15
16	3.720 [94.50]	LPJ16	LEJ16
17	3.936 [100.00]	LPJ17	LEJ17
18	4.153 [105.50]	LPJ18	LEJ18
19	4.370 [111.00]	LPJ19	LEJ19
20	4.586 [116.50]	LPJ20	LEJ20

WEIGHT (Excluding Modules)	
<b>Plug</b>	3.5 oz. at 4 units 5.5 oz. at 20 units
<b>Receptacle</b>	1.2 oz. at 4 units 2.1 oz. at 20 units

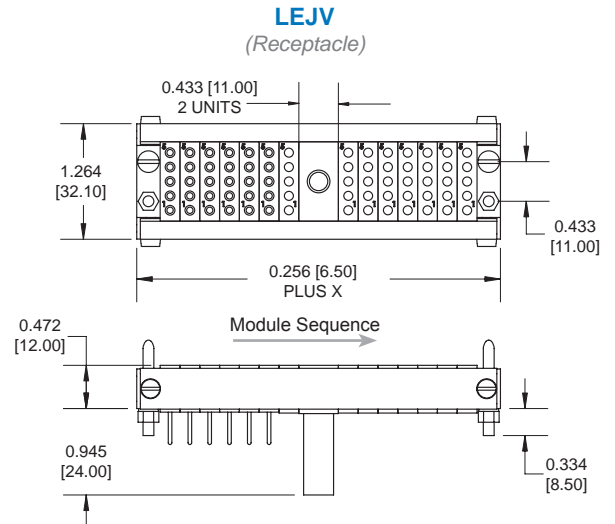
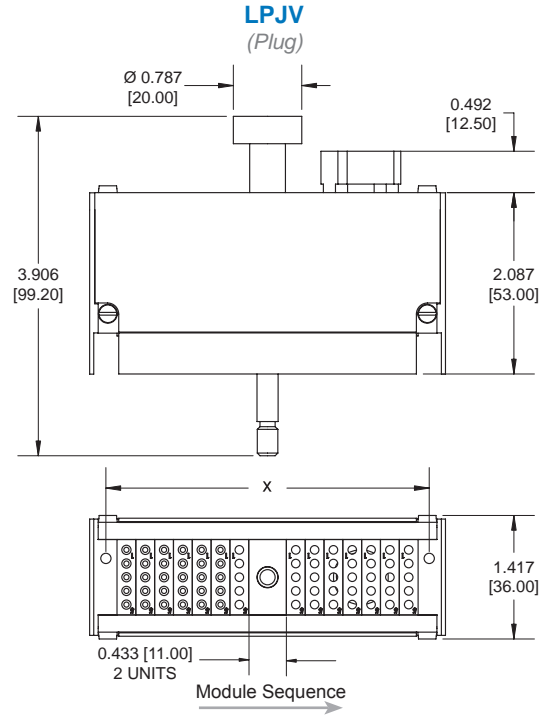
1)

**Notes:**  
Plugs with flat cable clamp available. Replace J in part number with K and cable clamp callout to SC33 [33mm] or SC50 [50mm].  
2) Plugs without cable clamp available. Replace J in part number with R and remove SC cable clamp callout.  
Dimensions are in inches [mm].

## ▶ FRAME JV

### Metal Backshell

- ▶ Hooded connector with round cable clamp
- ▶ Side and double openings also available by special order
- ▶ Jackscrew extraction



UNITS	X	PLUG	RECEPTACLE
4	1.122 [28.50]	LPJV4	LEJV4
5	1.338 [34.00]	LPJV5	LEJV5
6	1.555 [39.50]	LPJV6	LEJV6
7	1.771 [45.00]	LPJV7	LEJV7
8	1.988 [50.50]	LPJV8	LEJV8
9	2.205 [56.00]	LPJV9	LEJV9
10	2.421 [61.50]	LPJV10	LEJV10
11	2.638 [67.00]	LPJV11	LEJV11
12	2.854 [72.50]	LPJV12	LEJV12
13	3.070 [78.00]	LPJV13	LEJV13
14	3.287 [83.50]	LPJV14	LEJV14
15	3.504 [89.00]	LPJV15	LEJV15
16	3.720 [94.50]	LPJV16	LEJV16
17	3.936 [100.00]	LPJV17	LEJV17
18	4.153 [105.50]	LPJV18	LEJV18
19	4.370 [111.00]	LPJV19	LEJV19
20	4.586 [116.50]	LPJV20	LEJV20

### WEIGHT (Excluding Modules)

<b>Plug</b>	1.0 oz. at 4 units
	1.9 oz. at 20 units
<b>Receptacle</b>	1.0 oz. at 4 units
	1.9 oz. at 20 units

### Notes:

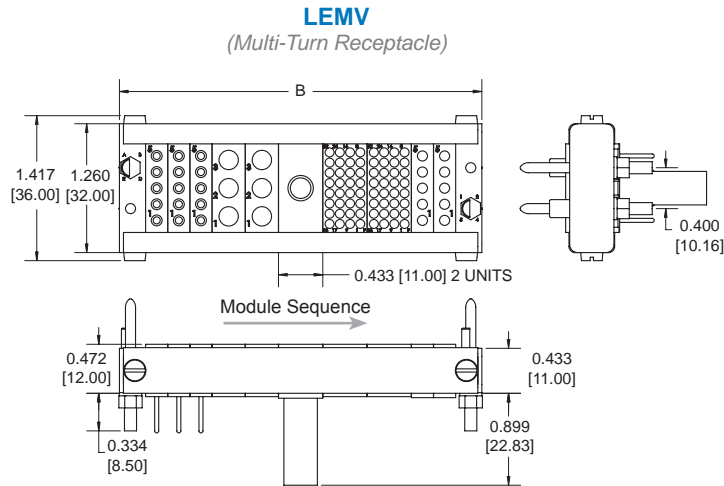
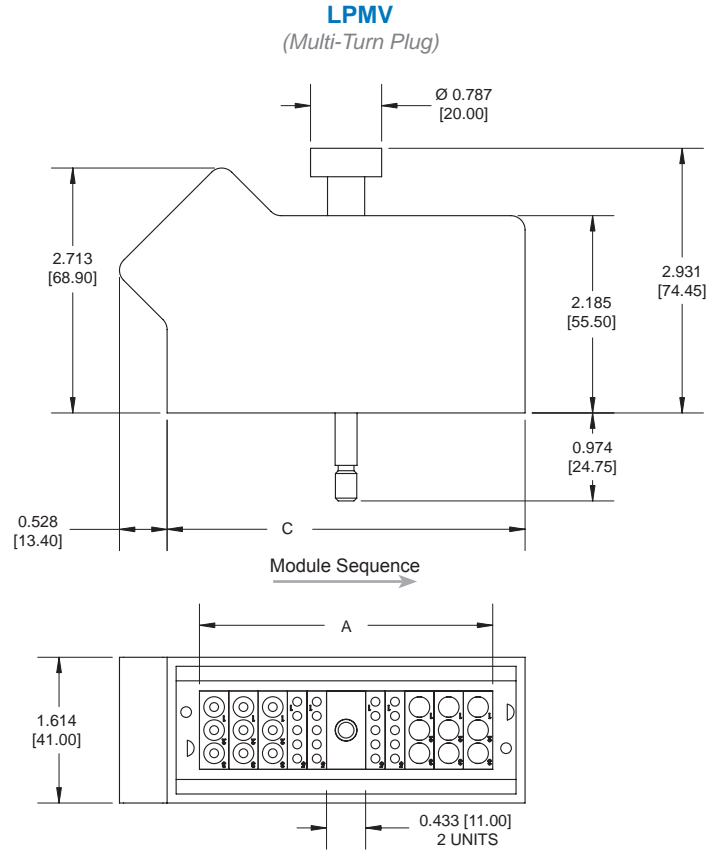
1) Plugs with flat cable clamp available. Replace J in part number with K and cable clamp callout to SC33 [33mm] or SC50 [50mm].

2) Plugs without cable clamp available. Replace J in part number with R and remove SC cable clamp callout. Dimensions are in inches [mm].

► **FRAME MV**

Plastic Backshells

- ▶ 180° standard multi-turn
- ▶ Up to 300 signal contacts
- ▶ Adjustable cable clamp: 0.425 to 1.26 [11.50 to 32.00]
- ▶ > 5,000 mating cycles
- ▶ 36 keying combinations
- ▶ Rugged black polycarbonate backshell
- ▶ Built-in pin protection
- ▶ 12, 15, 20 and 22 unit lengths



UNITS <sup>(1)</sup>	A	B	C	PLUG	RECEPTACLE
12	2.598 [66.00]	3.11 [79.00]	3.315 [84.20]	LPMV12	LEMV12
15	3.248 [82.50]	3.76 [95.50]	3.965 [100.70]	LPMV15	LEMV15
20	4.331 [110.00]	4.843 [123.00]	5.047 [128.20]	LPMV20	LEMV20
22	4.764 [121.00]	5.276 [134.00]	5.480 [139.20]	LPMV22	LEMV22

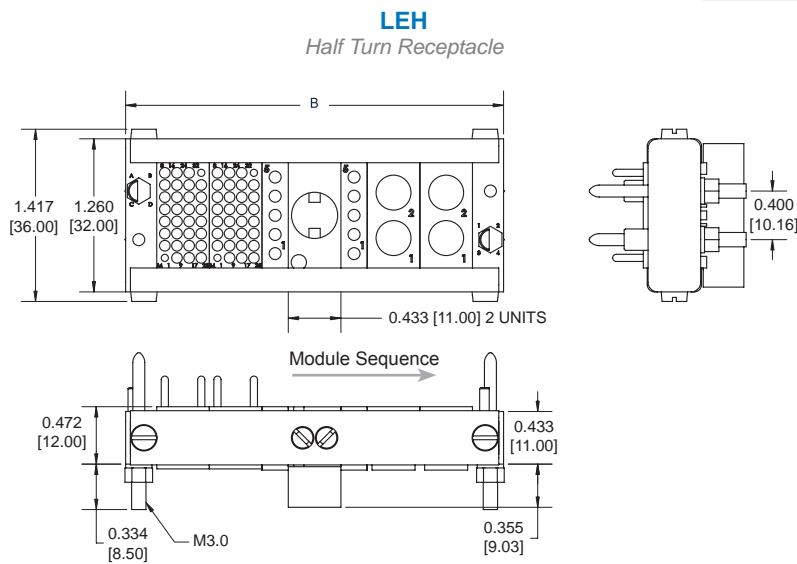
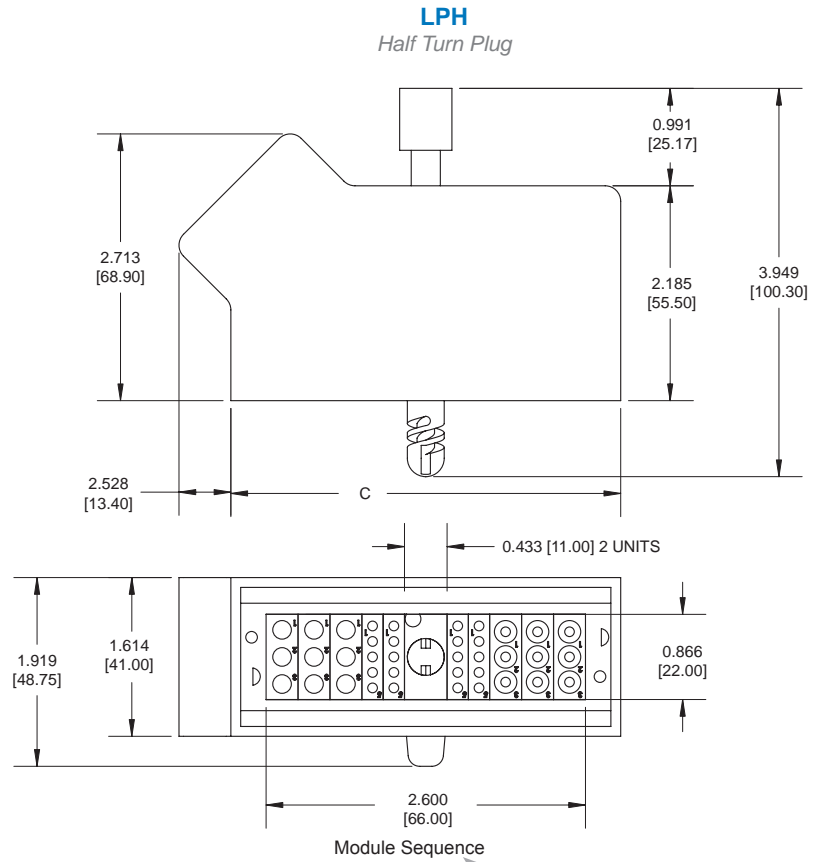
Notes:

1) Allow 2 additional units for frames with Jackscrews  
Dimensions are in inches [mm].

## ▶ FRAME MY

### Plastic Backshells

- ▶ 180° quick turn
- ▶ Up to 300 signal contacts
- ▶ Adjustable cable clamp: 0.425 [11.50] to 1.26 [32.00]
- ▶ > 5,000 mating cycles
- ▶ 36 keying combinations
- ▶ Rugged black polycarbonate backshell
- ▶ Built-in pin protection



UNITS <sup>(2)</sup>	B	C	PLUG	RECEPTACLE
12	3.11 [79.00]	3.312 [84.20]	LPMY12	LEMY12
15	3.76 [95.50]	3.965 [100.70]	LPMY15	LEMY15
20	4.843 [123.00]	5.047 [128.20]	LPMY20	LEMY20
22	5.276 [134.00]	5.480 [139.20]	LPMY22	LEMY22

#### Notes:

1) Half turn plug frame without hood available as LPMMY

2) Allow 2 additional units for frames with Jackscrews

Dimensions are in inches [mm].

# MODULES

## Specifications & Ordering Information

### ▶ TECHNICAL CHARACTERISTICS

	A	B	C	D	G	K	M	R	S	U	V <sup>(1)</sup>	W
<b>Current Rating</b>	8 A	15 A	25 A	8 A	200 A	100 A	50 A	8 A	15 A	25/50 A	25 A <sup>(2)</sup>	4 A
<b>Contact Resistance</b> (milliohms)	< 2.5	< 1.0	< 0.8	< 3.0	< 0.2	<0.35	< 0.4	< 2.5	< 1.5	< 0.8	< 1.5	< 5.0
<b>Extraction Force</b> (oz.) (per contact)	1.0 to 5.0	3.0 to 25.0	4.0 to 32.0	1.0 to 4.5	80.0 to 160.0	15.0 to 90.0	4.0 to 40.0	1.0 to 5.0	3.0 to 28.3	4.0 to 35.0	3.0 to 17.0	0.5 to 2.0
<b>Contact Life Cycle</b>	> 100,000											
<b>Breakdown Voltage</b> (V RMS)	> 2,000	> 1,600	> 3,000	> 1,800	> 1,500	> 1,500	> 3,000	> 1,600	> 2,000	> 2,800	> 1,600	>2,200
<b>DWV</b> (V RMS)	1,500	1,200	2,250	1,350	1,100	1,100	2,250	1,200	1,500	2,100	1,200	1,650
<b>Insulation Resistance</b> (megohms at 500 VDC)	10 <sup>6</sup>	10 <sup>6</sup>	10 <sup>6</sup>	10 <sup>6</sup>	10 <sup>6</sup>	10 <sup>6</sup>	10 <sup>6</sup>	10 <sup>4</sup>	10 <sup>4</sup>	10 <sup>4</sup>	10 <sup>4</sup>	10 <sup>9</sup>
<b>Temperature Rating</b> (°C)	-55 to 125	-55 to 125	-55 to 125	-55 to 125	—	—	-55 to 125	-55 to 125	-55 to 125	-55 to 105	-55 to 125	-55 to 125

### APPROXIMATE WEIGHT

<b>Pin</b> (oz.)	0.2	0.35	0.44	0.31	—	—	0.44	0.22	0.23	0.45	0.32	—
<b>Socket</b> (oz.)	0.15	0.25	0.31	0.45	—	—	0.31	0.16	0.35	0.29	0.34	—

### MATERIALS

<b>Pin</b>	Brass	Copper	Brass		
<b>Socket</b>	Beryllium copper wires and brass body				
<b>Insulator</b>	Diallyl-phthalate	Polyphthalamide	Diallyl-phthalate	Nylon	Polyphe-lylene sulfide

### CONTACT PLATING

<b>Pin</b> (µin gold (min) over nickel)	10/50	30	10/50
<b>Socket</b>	Mating surface: 50 µin gold (min) over nickel		Termination: gold flash over nickel on termination

**Notes:**

1) Module V Coax version available, see pg. 23

2) 25 A (free air), 17 A (bundled)

▶ **MODULE ACCESSORIES**

MODULE R	Crimp Tool	Crimp Die Set	Crimp Positioner	Insertion Tool	Extraction Tool	Mounting Bracket
Style 1			TP1650			
Style 2			TBA			
Style 3	AF8	—	TP592	S0150.01	S0150.01	—
Style 4			TP1128			
Style 5			TP613			

**MODULE S**

All Styles	M309	—	TP1179	S0250.01	S0250.01	—
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**MODULE U**

Style 1	T1264	—	TP1232			
Style 2	T1264	—	TP1232			
Style 3	T1264	—	TP1232	S0350.01	S0350.01	—
Style 4	T712	T761	T758			
Style 5	T1264	—	T1559			

**MODULE W**

All Styles	AFM8	—	K547 (Style R only) K547-2 (Style RR only)	T1866	S/DEM1.0060	—
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**MODULE V**

All Styles	M309	—	T1981	—	T1982	—
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**MODULE V COAX**

Center Conductor	AFM8	—	T1957			
Outer Conductor	HX3	T1958 or T2019 for RG316DB	—	—	T1982	—

**MODULE G**

All Styles	T1501	—	T1536	—	T1500	T1551
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**MODULE K**

All Styles	T1501	—	T1535	—	T1507	T1551
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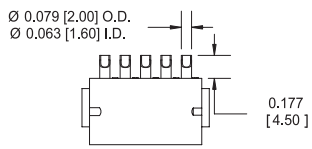
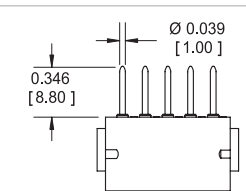
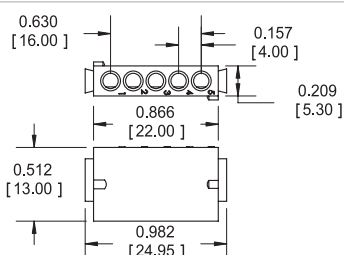
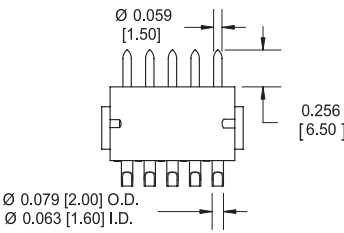
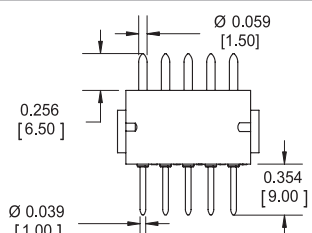
► **MODULE A**

8 A Contact Rating

1 unit, 5 Hypertac® hyperboloid fixed contacts, Ø 0.059 [1.50]

Mates with R crimp modules

 File No.: UL E102195

MODULE	GENDER	TERMINATION	PLATING	PART NUMBER
 <p><b>LAF</b></p>	Female	Solder Cup Up to 16 AWG	50 µin gold	<b>LAFSTAH</b>
 <p><b>LAF</b></p>	Female	Straight Dip Solder	50 µin gold	<b>LAFDTAH</b>
 <p><b>LAHT</b></p>	Empty Block	—	—	<b>LAHT (ZLM005-001)</b>
 <p><b>LAM</b></p>	Male	Solder Cup Up to 16 AWG	10 µin gold	<b>LAMST</b>
			50 µin gold	<b>LAMSTH</b>
 <p><b>LAM</b></p>	Male	Straight Dip Solder	10 µin gold	<b>LAMDT</b>
			50 µin gold	<b>LAMDTH</b>



## ► MODULE R

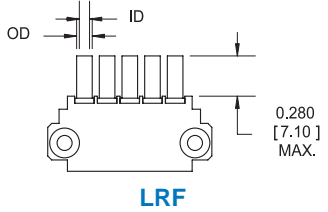
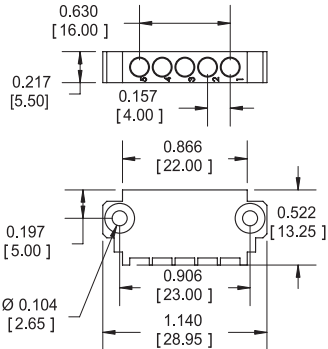
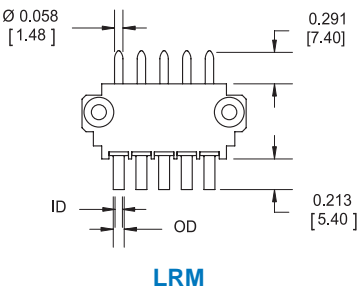
### 8 A Contact Rating

1 unit, 5 Hypertac® hyperboloid fixed contacts, Ø 0.059 [1.50]

Can be mounted by itself or in a frame

Mates with A modules

 File No.: UL E102195

MODULE	GENDER	WIRE GAUGE	I.D.	O.D.	PLATING	PART NUMBER	REPLACEMENT CONTACTS
 <p><b>LRF</b></p>	Female	18-22	0.057 [1.45]	0.104 [2.65]	50 µin gold	<b>LRF1</b>	YSK015-013AH
		22-26	0.035 [0.90]	0.051 [1.30]	50 µin gold	<b>LRF2</b>	YSK015-142AH
		16	0.071 [1.80]	0.108 [2.75]	50 µin gold	<b>LRF3</b>	YSK015-014AH
		14	0.079 [2.00]	0.122 [3.10]	50 µin gold	<b>LRF4</b>	YSK015-045AH
		28	0.022 [0.56]	0.076 [1.93]	50 µin gold	<b>LRF5</b>	YSK015-009AH
 <p><b>LRH</b></p>	Empty Block	—	—	—	—	<b>LRH (ZLR005-001)</b>	—
 <p><b>LRM</b></p>	Male	18-22	0.057 [1.45]	0.104 [2.65]	10 µin gold	<b>LRM1</b>	YPN015-009RG
					50 µin gold	<b>LRM1H</b>	YPN015-009RH
		22-26	0.035 [0.90]	0.051 [1.30]	10 µin gold	<b>LRM2</b>	YPN015-129G
					50 µin gold	<b>LRM2H</b>	YPN015-129H
		16	0.071 [1.80]	0.108 [2.75]	10 µin gold	<b>LRM3</b>	YPN015-010G
					50 µin gold	<b>LRM3H</b>	YPN015-010H
		14	0.079 [2.00]	0.122 [3.10]	10 µin gold	<b>LRM4</b>	YPN015-033RG
					50 µin gold	<b>LRM4H</b>	YPN015-033RH
		28	0.022 [0.56]	0.076 [1.93]	10 µin gold	<b>LRM5</b>	YPN015-004RG
					50 µin gold	<b>LRM5H</b>	YPN015-004RH

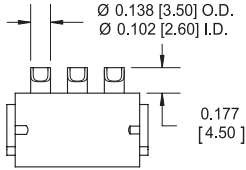
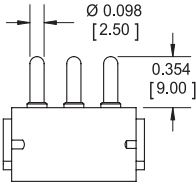
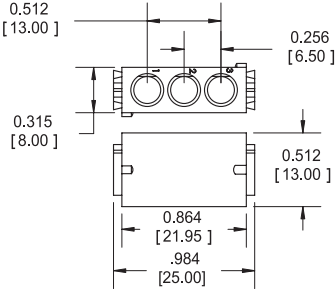
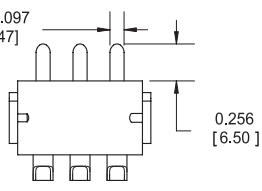
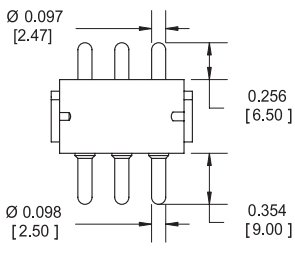
► **MODULE B**

15 A Contact Rating

1.5 units, 3 Hypertac® hyperboloid fixed contacts, Ø 0.098 [2.50]

Mates with S crimp modules

 File No.: UL E102195

MODULE	GENDER	TERMINATION	PLATING	PART NUMBER
 <p><b>LBF</b></p>	Female	Solder Cup Up to 12 AWG	50 µin gold	<b>LBFSTAH</b>
 <p><b>LBF</b></p>	Female	Straight Dip Solder	50 µin gold	<b>LBFDTAH</b>
 <p><b>LBHT</b></p>	Empty Block	—	—	<b>LBHT (ZLM003-001)</b>
 <p><b>LBM</b></p>	Male	Solder Cup Up to 12 AWG	10 µin gold	<b>LB MST</b>
			50 µin gold	<b>LB MSTH</b>
 <p><b>LBM</b></p>	Male	Straight Dip Solder	10 µin gold	<b>LBMDT</b>
			50 µin gold	<b>LBMDTH</b>

## ► MODULE S

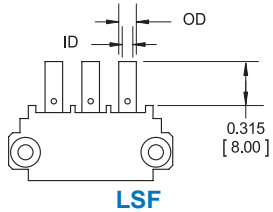
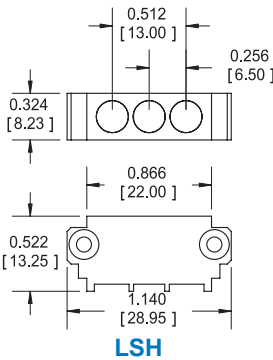
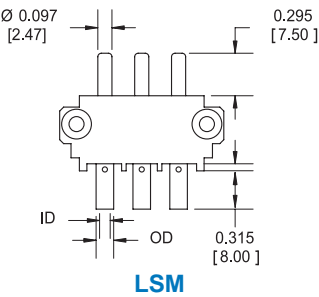
### 15 A Contact Rating

1.5 units, 3 Hypertac® hyperboloid “Snap In” crimp contacts, Ø 0.098 [2.50]

Can be mounted by itself or in a frame

Mates with B modules

 File No.: UL E102195


MODULE	GENDER	WIRE GAUGE	I.D.	O.D.	PLATING	PART NUMBER	REPLACEMENT CONTACTS
 <p><b>LSF</b></p>	Female	16-22	0.059 [1.50]	0.122 [3.10]	50 µin gold	<b>LSF1</b>	YSK025-003AH
		14-16	0.077 [1.95]	0.122 [3.10]	50 µin gold	<b>LSF2</b>	YSK025-004AH
		12	0.100 [2.54]	0.150 [3.81]	50 µin gold	<b>LSF4</b>	YSK025-013AH
 <p><b>LSH</b></p>	Empty Block	—	—	—	—	<b>LSH</b> (ZLS003-002)	—
 <p><b>LSM</b></p>	Male	16-22	0.059 [1.50]	0.122 [3.10]	10 µin gold	<b>LSM1</b>	YPN025-002G
		16-22			50 µin gold	<b>LSM1H</b>	YPN025-002H
		14-16	0.077 [1.95]	0.122 [3.10]	10 µin gold	<b>LSM2</b>	YPN025-003G
		14-16			50 µin gold	<b>LSM2H</b>	YPN025-003H
		12	0.100 [2.54]	0.150 [3.81]	10 µin gold	<b>LSM4</b>	YPN025-011RG
		12			50 µin gold	<b>LSM4H</b>	YPN025-011RH

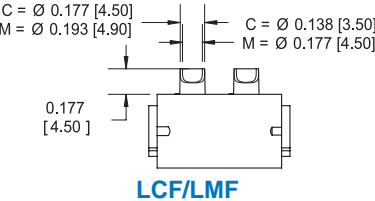
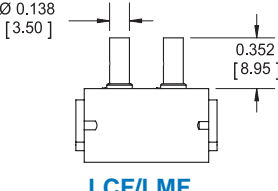
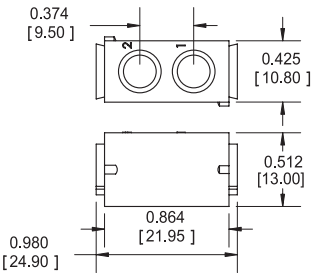
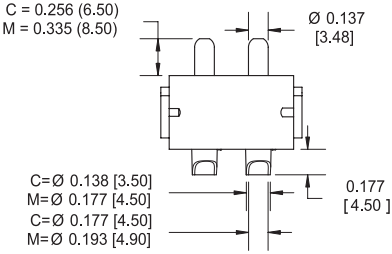
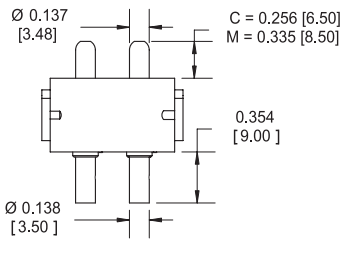
► **MODULES C & M**

25 or 50 A Contact Rating

2 units, 2 Hypertac® hyperboloid fixed contacts, Ø 0.138 [3.50]

Mate with U crimp modules

 File No.: UL E102195


MODULE	GENDER	TERMINATION	PLATING	CURRENT RATING	PART NUMBER
 <p><b>LCF/LMF</b></p>	Female	Solder Cup Up to 10 AWG	50 µin gold	25 A	<b>LCFSTA</b> H
		Solder Cup Up to 8 AWG		50 A	<b>LMFSTA</b> H
 <p><b>LCF/LMF</b></p>	Female	Straight Dip Solder	50 µin gold	25 A	<b>LCFDTA</b> H
				50 A	<b>LMFDTA</b> H
 <p><b>LCHT</b></p>	Empty Block	—	—	—	<b>LCHT</b> (ZLM002-001)
 <p><b>LCM/LMM</b></p>	Male	Solder Cup Up to 10 AWG	10 µin gold	25 A	<b>LCMST</b>
			50 µin gold		<b>LCMSTH</b>
		Solder Cup Up to 8 AWG	10 µin gold	50 A	<b>LMMST</b>
			50 µin gold		<b>LMMSTH</b>
 <p><b>LCM/LMM</b></p>	Male	Straight Dip Solder	10 µin gold	25 A	<b>LCMDT</b>
			50 µin gold		<b>LCMDTH</b>
			10 µin gold	50 A	<b>LMMDT</b>
			50 µin gold		<b>LMMDTH</b>

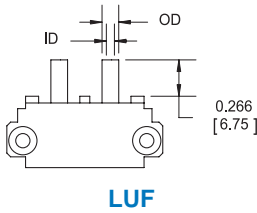
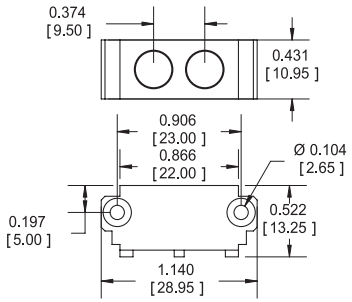
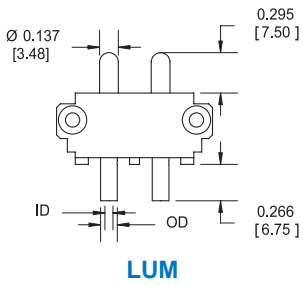
## ► MODULE U

### 25 or 50 A Contact Rating

2 units, 2 Hypertac® hyperboloid fixed contacts, Ø 0.138 [3.50]

Mates with C and M crimp modules


 File No.: UL E102195

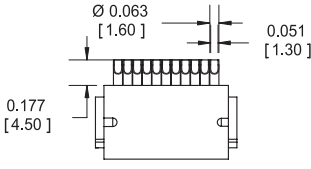
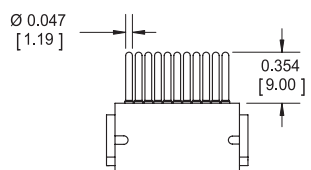
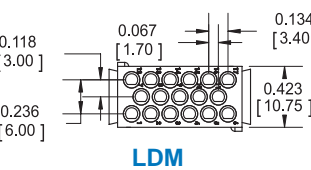
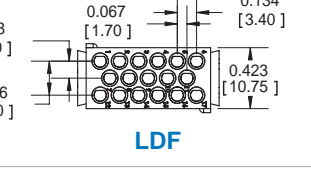
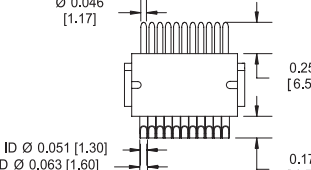
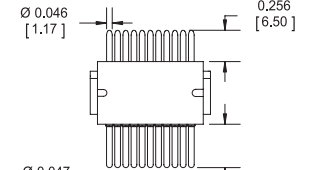
MODULE	GENDER	WIRE GAUGE	I.D.	O.D.	PLATING	CURRENT RATING	PART NUMBER	REPLACEMENT CONTACTS
 <p><b>LUF</b></p>	Female	20-22	0.059 [1.50]	0.122 [3.10]	50 µin gold	25 A	<b>LUF1</b>	YSK035-009AH
		16-18	0.077 [1.95]	0.122 [3.10]	50 µin gold	25 A	<b>LUF2</b>	YSK035-010AH
		12-14	0.112 [2.85]	0.161 [4.10]	50 µin gold	25 A	<b>LUF3</b>	YSK035-011AH
		6	0.217 [5.50]	0.285 [7.25]	50 µin gold	50 A	<b>LUF4</b>	YSK035-030AH
		8-10	0.177 [4.50]	0.217 [5.50]	50 µin gold	50 A	<b>LUF5</b>	YSK035-028AH
 <p><b>LUH</b></p>	Empty Block	—	—	—	—	—	<b>LUH (ZLU002-001)</b>	—
 <p><b>LUM</b></p>	Male	20-22	0.059 [1.50]	0.122 [3.10]	10 µin gold	25 A	<b>LUM1</b>	YPN035-005G
					50 µin gold		<b>LUM1H</b>	YPN035-005H
		16-18	0.059 [1.50]	0.122 [3.10]	10 µin gold	25 A	<b>LUM2</b>	YPN035-006G
					50 µin gold		<b>LUM2H</b>	YPN035-006H
		12-14	0.112 [2.85]	0.161 [4.10]	10 µin gold	25 A	<b>LUM3</b>	YPN035-007G
					50 µin gold		<b>LUM3H</b>	YPN035-007H
		6	0.217 [5.50]	0.285 [7.25]	10 µin gold	50 A	<b>LUM4</b>	YPN035-025RG
					50 µin gold		<b>LUM4H</b>	YPN035-025RH
		8-10	0.177 [4.50]	0.217 [5.50]	10 µin gold	50 A	<b>LUM5</b>	YPN035-023RG
					50 µin gold		<b>LUM5H</b>	YPN035-023RH

► **MODULE D**

8 A Contact Rating

2 units, 17 Hypertac® hyperboloid fixed contacts, Ø 0.147 [1.20]

 File No.: UL E102195

MODULE	GENDER	TERMINATION	PLATING	PART NUMBER
 <p><b>LDF</b></p>	Female	Solder Cup Up to 20 AWG	50µin gold	<b>LDFSTAH</b>
 <p><b>LDF</b></p>	Female	Straight Dip Solder	50µin gold	<b>LDFDTAH</b>
 <p><b>LDM</b></p>	Empty Block Male	—	—	<b>LDMHT (ZLM017-001)</b>
 <p><b>LDF</b></p>	Empty Block Female	—	—	<b>LDFHT (ZLM017-002)</b>
 <p><b>LDM</b></p>	Male	Solder Cup Up to 20 AWG	10µin gold	<b>LDMST</b>
			50µin gold	<b>LDMSTH</b>
 <p><b>LDM</b></p>	Male	Straight Dip Solder	10µin gold	<b>LDMDT</b>
			50µin gold	<b>LDMDTH</b>

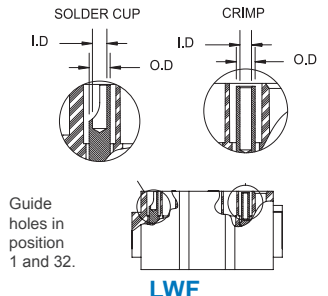
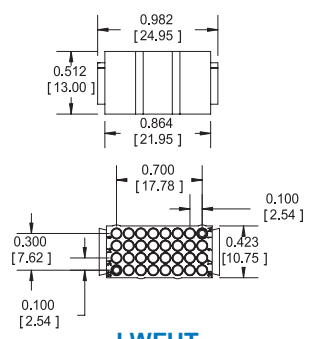
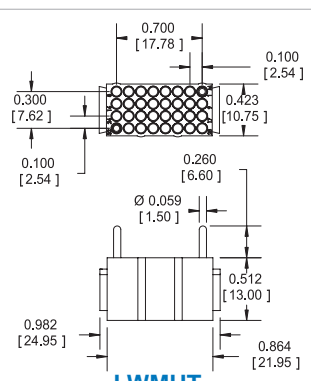
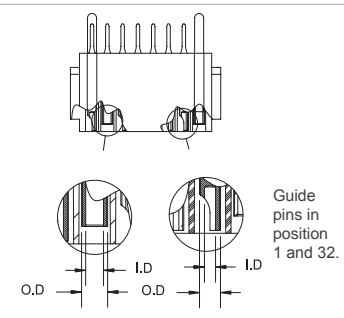
Notes:

1) If assembling the modules into a frame, two YHD0027 clips are required per module.  
Dimensions are in inches [mm].

## ► MODULE W

### 4 A Contact Rating


2 units, 30 Hypertac® hyperboloid removable contacts, Ø 0.024 [0.60]  
 Can be mounted by itself or in a frame

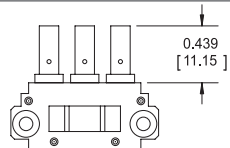
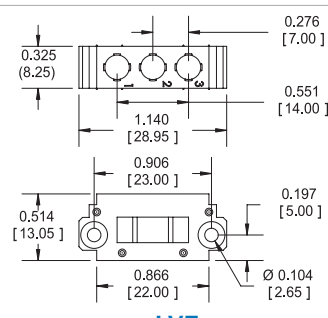
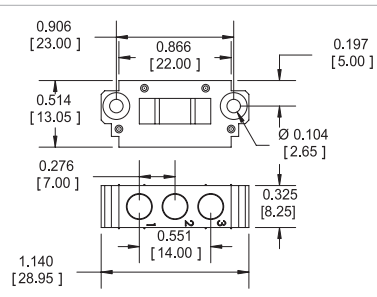
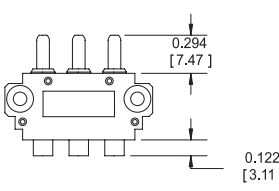
MODULE	GENDER	TERMINATION	I.D.	O.D.	PLATING	PART NUMBER	REPLACEMENT CONTACTS
 <p><b>LWF</b></p>	Female	Crimp 18-20 AWG	0.055 [1.39]	0.071 [1.80]	50µin gold	<b>LWFRTAH</b>	YSK006-089AH
		Crimp 22-26 AWG	0.035 [0.90]	0.051 [1.30]	50µin gold	<b>LWFRTAH</b>	YSK006-011ANH
		Solder Cup 26 AWG	0.039 [1.00]	0.057 [1.45]	50µin gold	<b>LWFS TAH</b>	YSK006-010ANH
 <p><b>LWFHT</b></p>	Female Empty Block	—	—	—	—	<b>LWFHT</b> (ZLM030-002)	—
 <p><b>LWMHT</b></p>	Male Empty Block	—	—	—	—	<b>LWMHT</b>	—
 <p><b>LWM</b></p>	Male	Crimp 18-20 AWG	0.055 [1.39]	0.071 [1.80]	10µin gold	<b>LWMRRT</b>	YPN006-158G
					50µin gold	<b>LWMRRTH</b>	YPN006-158H
		Crimp 22-26 AWG	0.035 [0.90]	0.051 [1.30]	10µin gold	<b>LWMRT</b>	YPN006-021G
					50µin gold	<b>LWMRTH</b>	YPN006-021H
		Solder Cup 26 AWG	0.039 [1.00]	0.057 [1.45]	10µin gold	<b>LWMST</b>	YPN006-020G
50µin gold	<b>LWMSTH</b>				YPN006-020H		

► **MODULE V**

25 A Contact Rating

1.5 units, 3 Hypertac® hyperboloid fixed contacts  
 Can be mounted by itself or in a frame

 File No.: UL E102195


MODULE	GENDER	TERMINATION	PART NUMBER	REPLACEMENT CONTACTS
 <p><b>LVF</b></p>	Female	Crimp 12-14 AWG	<b>LVFP1TAH</b>	YSK025-031AH
 <p><b>LVF</b></p>	Female Empty Block	—	<b>LVFHT (ZLV003-001)</b>	—
 <p><b>LVM</b></p>	Male Empty Block	—	<b>LVMHT (ZLV003-002)</b>	—
 <p><b>LVM</b></p>	Male	Crimp 12-14 AWG	<b>LVMP1TH</b>	YPN025-024H

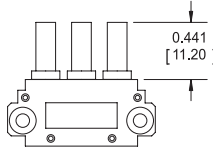
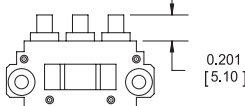
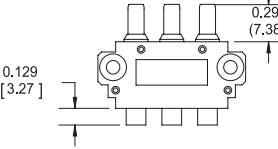
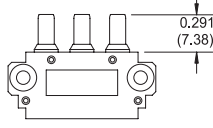


## ► MODULE V

### Coax

1.5 units, 13 Hypertac® hyperboloid contacts (on both signal and ground)  
Can be mounted by itself or in a frame

 File No.: UL E102195

MODULE	GENDER	TERMINATION	PART NUMBER	REPLACEMENT CONTACTS
 <p><b>LVF</b></p>	Female	Crimp Coaxial for RG316	<b>LVFRTAH</b>	YCX0315-002AH
		Crimp Coaxial for RG316DB	<b>LVFR1TAH</b>	YCX0315-019AH
 <p><b>LVF</b></p>	Female	Solder Coaxial for RG405 or T-Flex 405	<b>LVFSTAH</b>	YCX0315-001AH
 <p><b>LVM</b></p>	Male	Crimp Coaxial for RG316	<b>LVMRH</b>	YCX0315-004H
		Crimp Coaxial for RG316DB	<b>LVMR1TH</b>	YCX0315-018H
 <p><b>LVM</b></p>	Male	Crimp 12-14 AWG	<b>LVMSTH</b>	YCX0315-003H

CABLING	CRIMP (R) and (R1)	SOLDER (S)
<b>Cable</b>	RG316 & RG316DB	RG405 & T-Flex 405
<b>Socket</b>	1.6 oz. at 4 units 2.5 oz. at 20 units	S50301 & S50307
<b>Pin</b>	S50304	S50303 & S50308

Please request specs from our customer service department.

### COAXTAC™

<b>Nominal Impedance</b>	50 ohms
<b>Frequency Range</b>	DC 3 GHz with RG316 DC 18 GHz with RG405
<b>Contact Resistance</b>	
Inner Contact	8 milliohms max.
Outer Contact	2 milliohms max.
<b>Temperature Rating</b>	-55° to 125° C
<b>Voltage Standing Wave Ratio</b>	(DC to 3 GHz) 1:20:1 max. (3 GHz to 18 GHz) 1:50:1 max.
<b>RF Transmission Loss</b>	0.50 dB at 18 GHz
<b>Insulation Resistance</b>	5,000 megohms min.
<b>DWV</b>	500 V RMS
<b>Extraction Force Per Contact</b>	1.5 to 6.0 oz. max. 3.0 oz. average
<b>Connector Life Cycle</b>	> 25,000 cycles

### MATERIALS & FINISHES

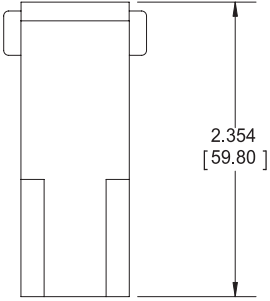
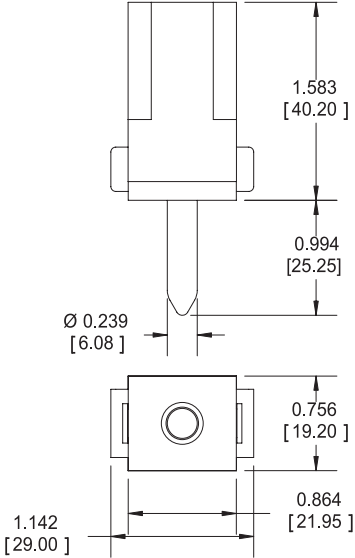
<b>Materials</b>	Brass, beryllium copper PTFE fluorocarbon
<b>Finishes</b>	
Center Contacts & Housings	Gold over nickel over copper
Wire	Gold over nickel

► **MODULE G**

200 A Contact Rating

3.5 units, 1 Hypertac® hyperboloid removable crimp contact, Ø 0.239 [6.08]  
 Recommended for LEH and LPH frames only

 File No.: UL E102195

MODULE	GENDER	TERMINATION	I.D.	PLATING	PART NUMBER	REPLACEMENT CONTACTS
 <p><b>LGF</b></p>	Female	Crimp 1/0 AWG	0.445 [11.30]	50 µin gold	<b>LGFRTAH</b>	YSK0612-015AH
 <p><b>LGM</b></p>	Male	Crimp 1/0 AWG	0.445 [11.30]	30 µin gold	<b>LGMRTI</b>	YPN0612-021RI


**Notes:**

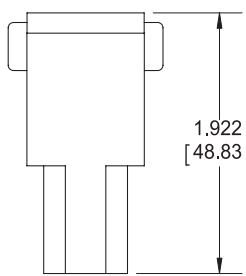
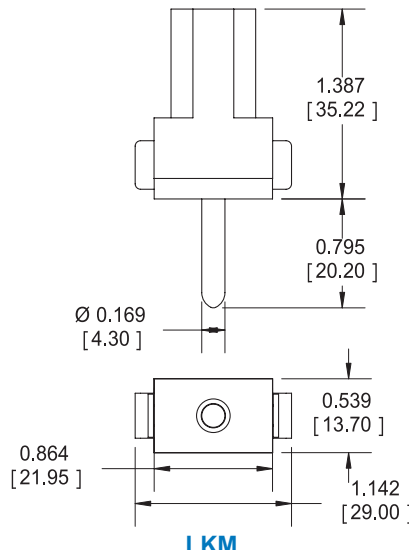
- 1) Contacts shipped unassembled.
- 2) Approved for 180 Amps by CSA for 30° C temperature rise.  
 Dimensions are in inches [mm].

## ► MODULE K

### 100 A Contact Rating

2.5 units, 1 Hypertac® hyperboloid removable crimp contact, Ø 0.169 [4.30]  
 Recommended for LEH and LPH frames only

 File No.: UL E102195

MODULE	GENDER	TERMINATION	I.D.	PLATING	PART NUMBER	REPLACEMENT CONTACTS
 <p><b>LKF</b></p>	Female	Crimp 4 AWG	0.283 [7.20]	50 µin gold	<b>LKFRTAH</b>	YSK043-010AH
 <p><b>LKM</b></p>	Male	Crimp 4 AWG	0.283 [7.20]	30 µin gold	<b>LKMRTI</b>	YPN043-010AH

**Notes:**

- 1) Contacts shipped unassembled.
  - 2) Approved for 180 Amps by CSA for 30° C temperature rise.
- Dimensions are in inches [mm].

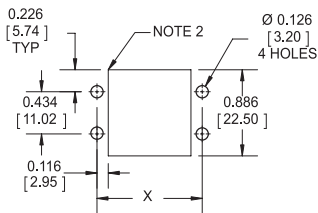
# MOUNTING DIMENSIONS

UNITS	X	Y
4	1.122 [28.50]	1.969 [50.00]
5	1.338 [34.00]	2.185 [55.50]
6	1.555 [39.50]	2.402 [61.00]
7	1.771 [45.00]	2.618 [66.50]
8	1.988 [50.50]	2.835 [72.00]
9	2.205 [56.00]	3.051 [77.50]
10	2.421 [61.50]	3.268 [83.00]
11	2.638 [67.00]	3.484 [88.50]
12	2.854 [72.50]	3.701 [94.00]
13	3.070 [78.00]	3.917 [99.50]
14	3.287 [83.50]	4.134 [105.00]
15	3.504 [89.00]	4.350 [110.50]
16	3.720 [94.50]	4.567 [116.00]
17	3.936 [100.00]	4.784 [121.50]
18	4.153 [105.50]	5.00 [127.00]
19	4.370 [111.00]	5.217 [132.50]
20	4.586 [116.50]	5.433 [138.00]
21	4.803 [122.00]	5.650 [143.50]
22	5.019 [127.50]	5.866 [149.00]

## STATIONARY MOUNTING

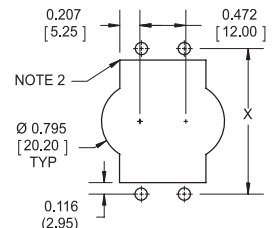
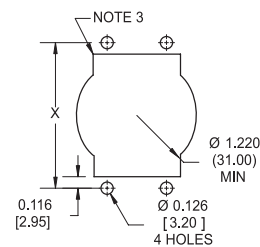
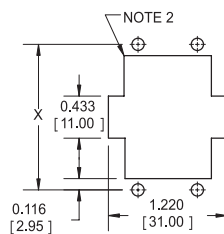
For Frame Types: A, B, BV, J, JV, K, KV, R, RV

### MOUNT TO WIRING SIDE OF CONNECTOR



### STATIONARY WITH JACKSCREW EXTRACTION

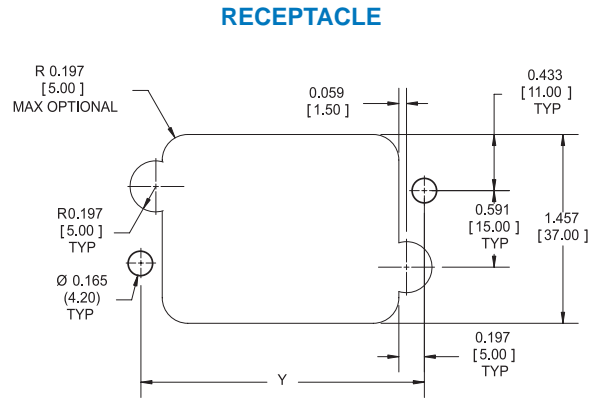
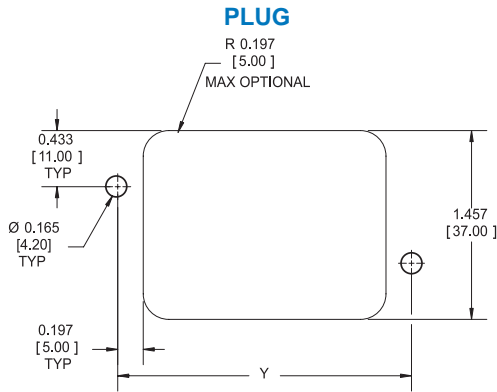
3 Alternate Mounting Dimensions for Receptacle to Provide Clearance for Jackscrew Base Hold Down Clamps



- Notes:**
- 1) Standard frames are shipped completely assembled with the selected modules mounted.
  - 2) 59.0 oz. in torque for mounting.
  - 3) 0.010 [0.25] maximum radius typical.
- Dimensions are in inches [mm].

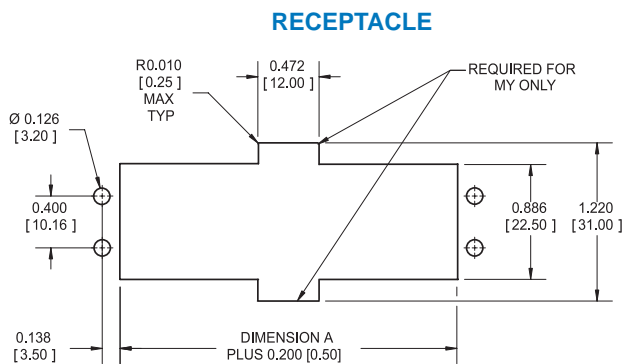
## ▶ FLOAT MOUNTING

For Frame Type H



## ▶ MOUNTING

For Frame Type MV & MY



UNITS      A

<b>12</b>	2.598 [66.00]
<b>15</b>	3.248 [82.50]
<b>20</b>	4.331 [110.00]
<b>22</b>	4.764 [121.00]

### Notes:

1) Standard frames are shipped completely assembled with the selected modules mounted.

2) 59.0 oz. in torque for mounting.

3) 0.010 [0.25] maximum radius typical.

Dimensions are in inches [mm].

#### **Disclaimer 2014**

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# SMITHS CONNECTORS PRODUCT LINES

## Circular



- ▶ Metal and plastic
- ▶ Industrial M12, M23, M40, M58
- ▶ Crimp and solder terminations
- ▶ Push/pull latch mechanism
- ▶ Color coding

## EMI / EMP Filter



- ▶ EMI/RFI filtering and transient protection
- ▶ RoHS compliant solderless filter connectors available
- ▶ Filtered adapter for "bolt on" EMI/EMP solutions
- ▶ Filter hybrid capability
- ▶ Circular, ARINC, D-Subminiature, Micro-D

## Heavy Duty



- ▶ Modular solution: signal, power, data contacts and fiber optics
- ▶ EMC shielding
- ▶ High pressure up to 35K PSI, 250°C
- ▶ High temperature up to 440°C

## High Power



- ▶ Single and multi-way
- ▶ Circular and configurable rectangular
- ▶ Power contact up to 1,200 Amps
- ▶ Excellent performance in harsh environments

## High Speed Copper / Fiber



- ▶ QuadraX and Twinax connectors
- ▶ Fiber Optic Butt Joint, Expanded Beam and Floating Fiber Termini available
- ▶ ARINC and MIL-STD contacts

## Mil / Aero Standards



- ▶ Standard military interface
- ▶ ARINC 801
- ▶ ARINC interface
- ▶ Custom inserts

## Modular / Rectangular



- ▶ Configurable modules for signal, power, coax, fiber optic and/or pneumatics
- ▶ Guided hardware for blind mating
- ▶ Easy configuration in a single frame
- ▶ For rack & panel and cable applications

## PCB



- ▶ Low, medium and high density board-to-board, cable to board and stacking
- ▶ Signal, power, coax and high speed configurations
- ▶ Numerous termination styles

## Spring Probe



- ▶ Z-axis compliant
- ▶ Blind mate engagement
- ▶ High density
- ▶ Extreme miniaturization
- ▶ High reliability, multi-cycle performance

# SMITHS CONNECTORS GLOBAL SUPPORT

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