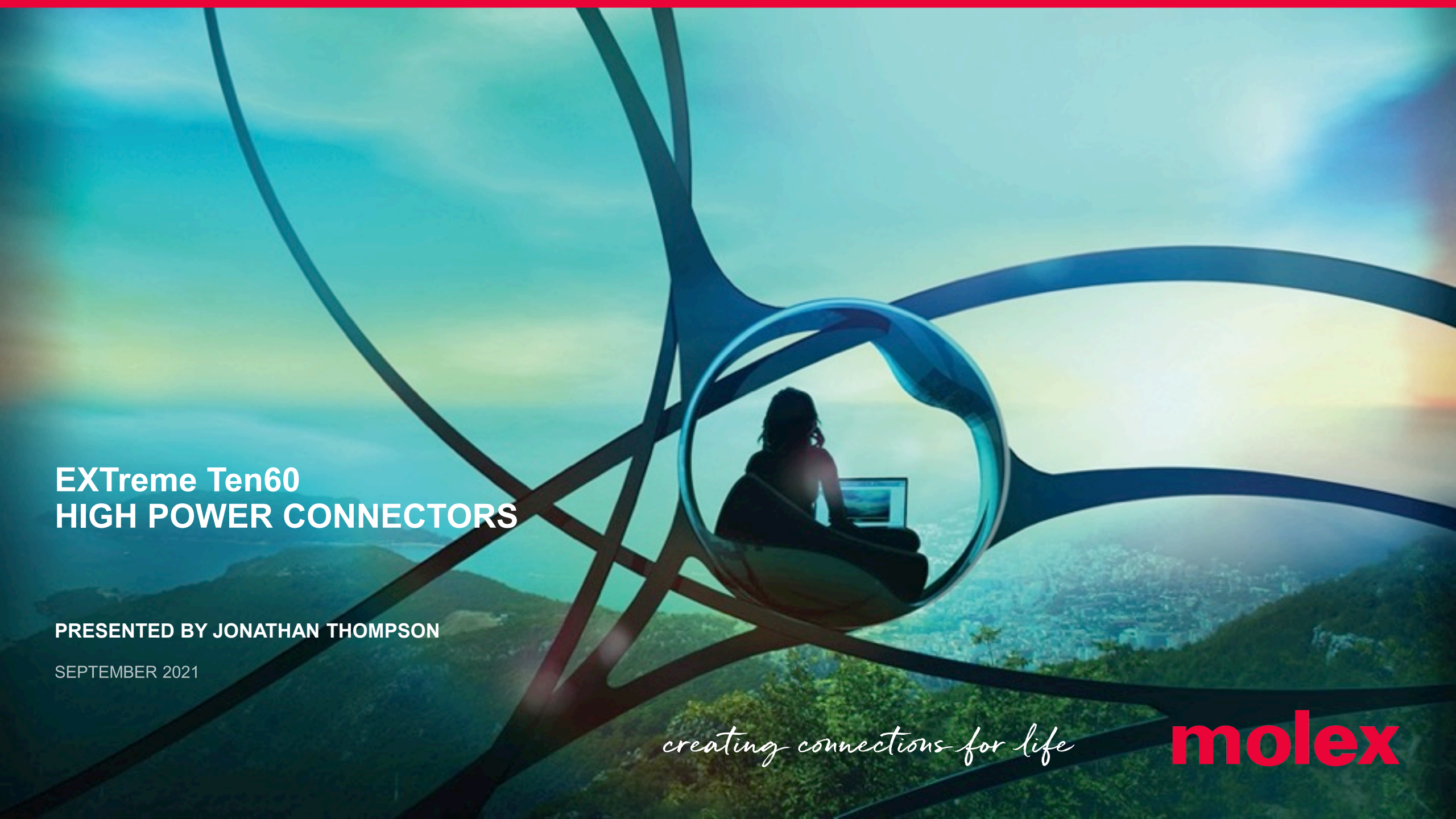




# EXTreme Ten60 HIGH POWER CONNECTORS

PRESENTED BY JONATHAN THOMPSON

SEPTEMBER 2021

*creating connections for life*

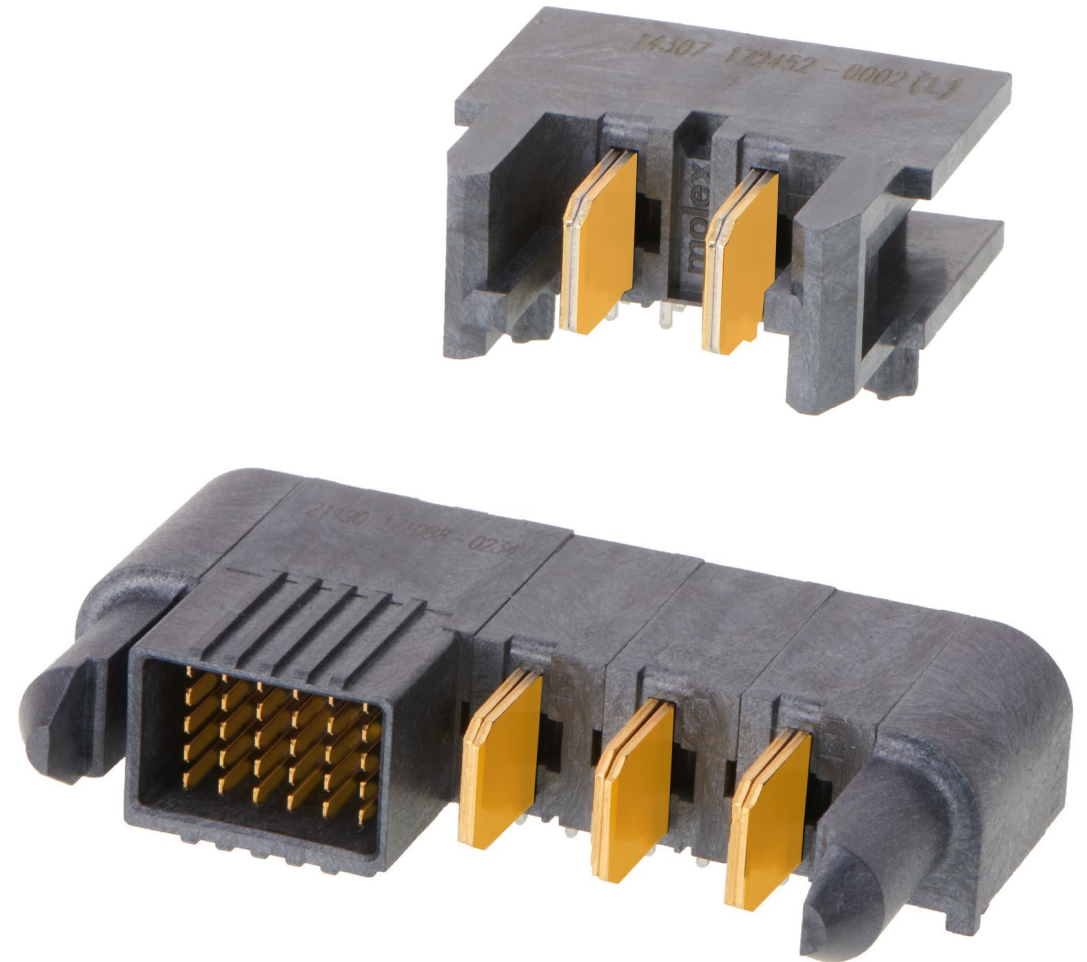
**molex**

## EXPERIENCE THE FREEDOM OF DESIGNING WITH LEADING-EDGE TECHNOLOGY

EXTreme Ten60 offers power terminal flexibility in low power (30 amps) and high power (60amps) in both AC pitches and DC pitches. For designers with higher layer boards, EXTreme Ten60 connectors may achieve over 95 amps with our high-power terminal depending on the configuration.

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**Board-to-board & Wire to Board solutions designed for better airflow and higher current density**

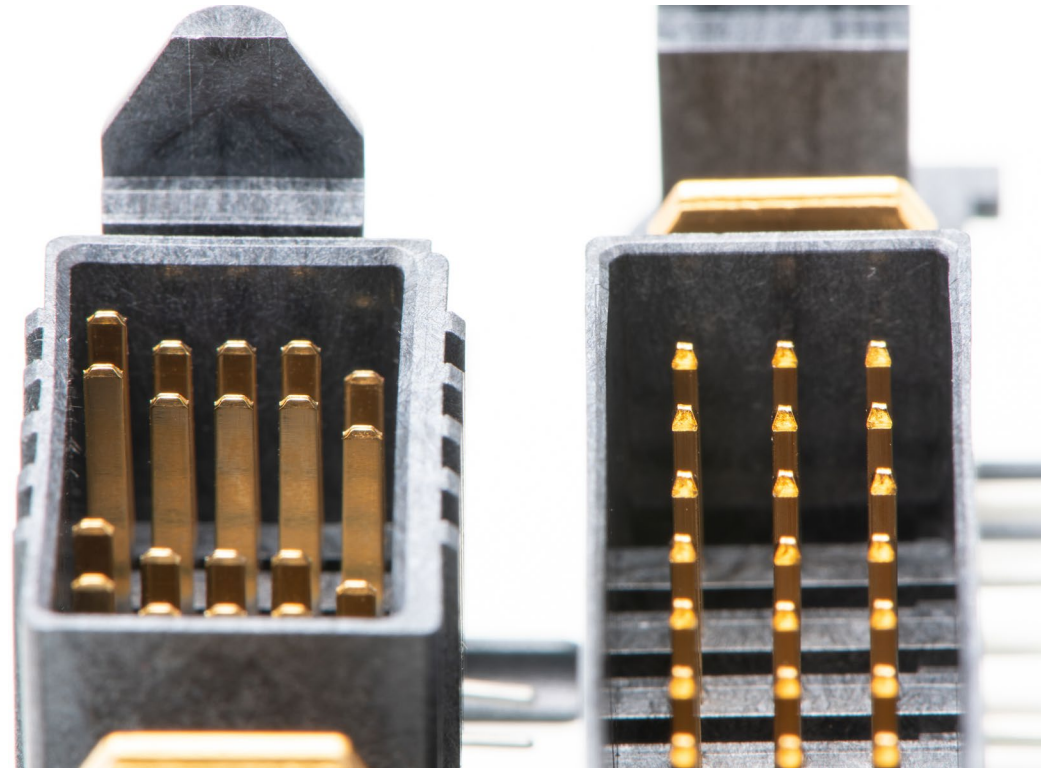




## FEATURES AND ADVANTAGES

Make your design **miniaturized, robust**  
and **reliable**

- High Density Signal or Standard 2.54mm pitches
- Board to Board, Board to Panel, Wire to Board
- Side guides or top guides
- 29mm mated depth
- Flexible PCB thicknesses from 1.6mm+ and greater



### Pitch Options

5.50mm, 6.00mm  
7.50mm, 8.00mm

### Mating height

10.00mm

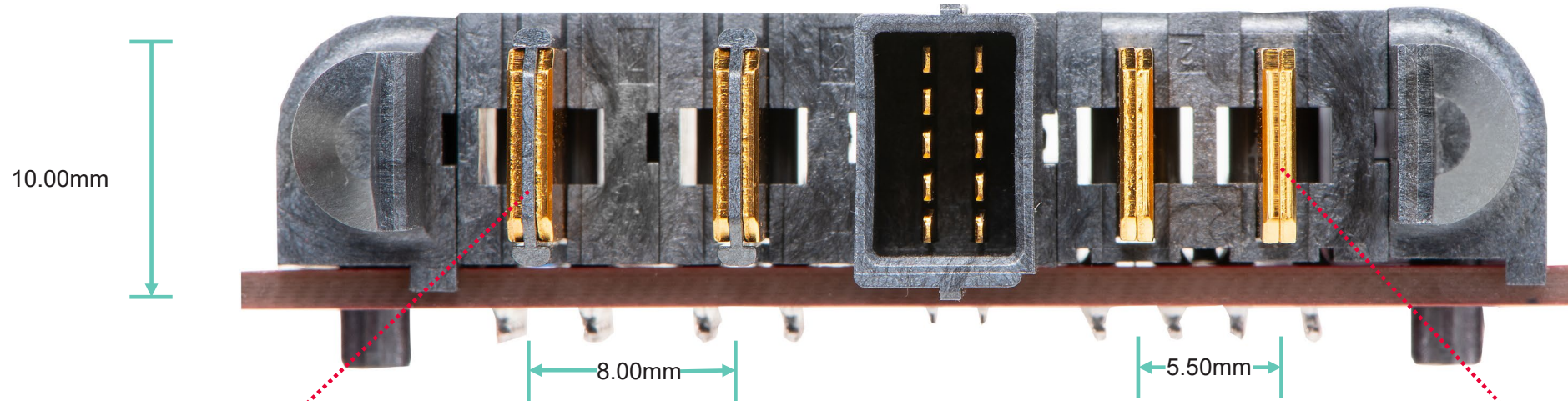
### Max. Current

30.0A to 95.0A

### Solder Tails

2.50mm-3.62mm  
Or Pressfit

# MOST FLEXIBLE DESIGN



1

## Split Power – Space Savings

Molex's Split power designs allows designers low power options with currents up to 30 amps per blade.

2

## Current Mix – Design Flexibility

Molex's Supports both AC & DC applications with multiple Pitch ranges for each current type.

3

## Single Blade – Power Density

Molex's single blade design offers with high power current up to 95 amps



# MAXIMUM FLEXIBILITY

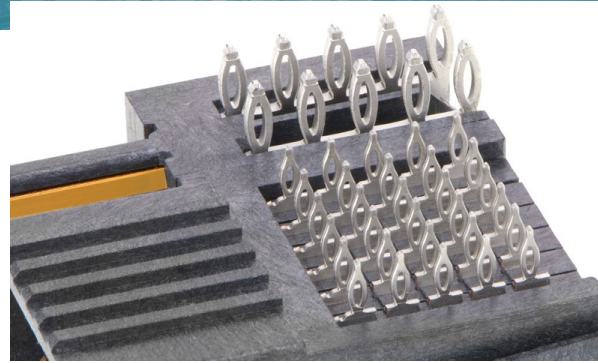


1

## Top Guide or Side Guide

Guides help to gather connectors for a smoother entry gradient

Nominal Gather ability of 1.00mm+ in all directions



2

## Press Fit or Solder Tail

Allows multiple styles of PCB mounting to better suit different designs.

Solder Tail Available in 2.84mm and 3.61mm

Press-Fit Available for 1.60mm minimum thickness and greater



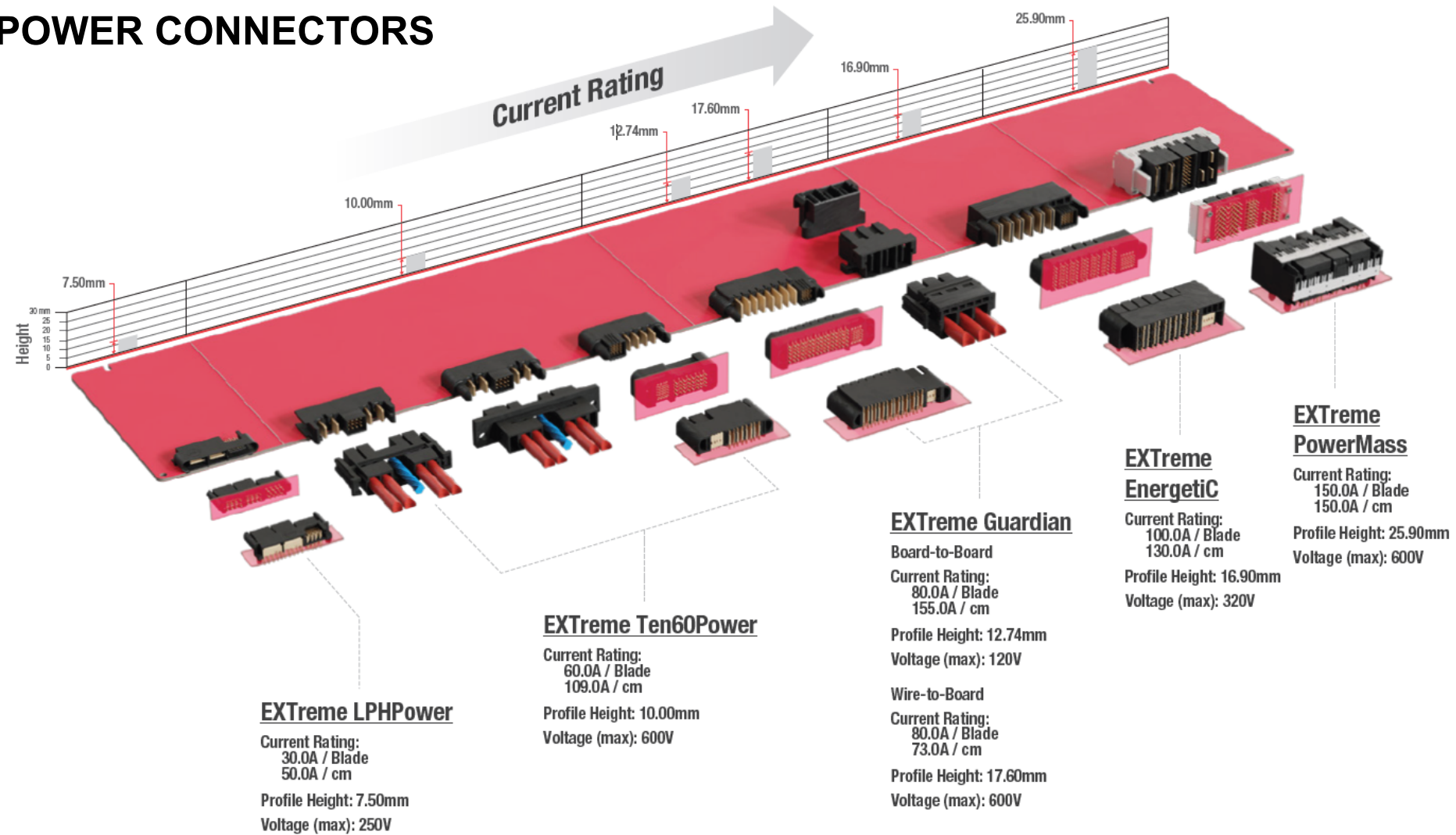
3

## Cable Crimp Options

Wire to board options available in multiple AWG sizes (8AWG to 16 AWG)

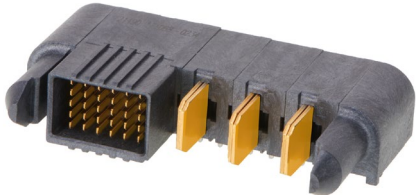
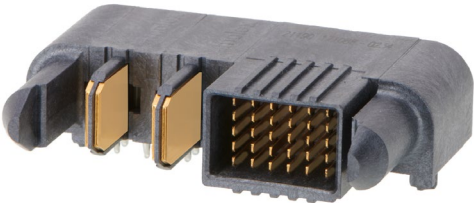
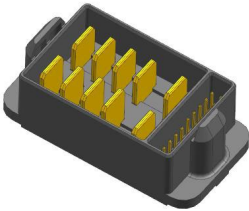
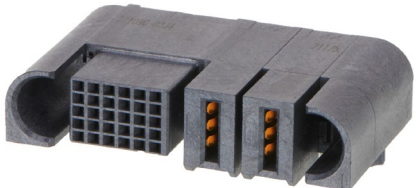
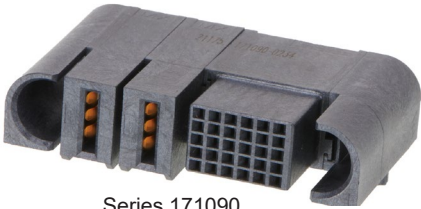
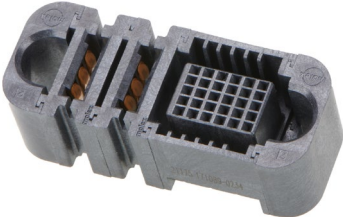
Power & Power Hybrids (with signal) tooled and available

# EXTreme POWER CONNECTORS





# OUR PORTFOLIO FOR BOARD-TO-BOARD

|                         | Standard Terminals                                                                                 | Split Power Terminals                                                                                  | Mezzanine                                                                                            |
|-------------------------|----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| Plugs                   | <br>Series 46437 | <br>Series 171088   | <br>Series 76546  |
| Right Angle Receptacles | <br>Series 46436 | <br>Series 171090   |                                                                                                      |
| Vertical Receptacles    | <br>Series 4562 | <br>Series 171089 | <br>Series 76541 |

Products shown are concepts and not in production at this time. Last Updated as of April 2021

# OUR PORTFOLIO FOR WIRE-TO-BOARD

|                                            | Wire to Board                                                                                | Panel To Board                                                                                        |
|--------------------------------------------|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| PCB Plugs<br>(Power Only)                  | A grey PCB plug with four gold-plated pins.<br>Series 172452                                 | A grey panel-to-board connector with four gold-plated pins.<br>Series 172457                          |
| Wire Receptacle<br>(Power Only)            | A grey wire receptacle with four gold-plated pins.<br>Series 172509                          | A grey panel-to-board connector with four gold-plated pins.<br>Series 172511                          |
| PCB Plugs<br>(Power & Signal Hybrid)       | A grey PCB plug with four gold-plated pins and a central signal pin.<br>Series 172453        | A grey panel-to-board connector with four gold-plated pins and a central signal pin.<br>Series 172458 |
| Wire Receptacle<br>(Power & Signal Hybrid) | A grey wire receptacle with four gold-plated pins and a central signal pin.<br>Series 172510 | A grey panel-to-board connector with four gold-plated pins and a central signal pin.<br>Series 172512 |

Products shown are concepts and not in production at this time. Last Updated as of April 2021



# EXTreme Ten60 CONFIGURATOR – CREATE YOUR OWN LAYOUT CONNECTOR

1

## Select Orientation

2

## Power Configuration Signal Quantity Long or Short Pin Guide Styles PCB Pin options



[EXTreme TEN60 Configurator](#)

**1** Select your connector configuration:

☒ R/A to VERTICAL  ☐ COPLANAR 

Type of Tails:  
☒ Solder tails  
☐ Pressfit Tails  
Vertical receptacle will be press-fit

**2** Configure your layout and calculate the connector length:

|                                                          |                                                                             |                                                                                                              |                                                            |                                                       |                                                             |                                                                                                               |
|----------------------------------------------------------|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|-------------------------------------------------------|-------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| Total Amps Requirement<br><input type="text" value="3"/> | Guides<br><input type="radio"/> Top<br><input checked="" type="radio"/> End | Left Power<br><input checked="" type="radio"/> DC<br><input type="radio"/> AC<br><input type="radio"/> Split | No. of Power Blades Left<br><input type="text" value="2"/> | No. of Signal Pins<br><input type="text" value="10"/> | No. of Power Blades Right<br><input type="text" value="2"/> | Right Power<br><input checked="" type="radio"/> DC<br><input type="radio"/> AC<br><input type="radio"/> Split |
|----------------------------------------------------------|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|-------------------------------------------------------|-------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|

Right angle plug depicted

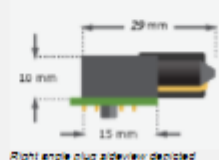


Click on the power blades in the image above to select 'Long' vs 'Short.'

Signal pins are available in a variety of lengths, upon request.

**Power Blade Legend**

|          |          |             |
|----------|----------|-------------|
| AC Short | DC Short | Split Short |
| AC Long  | DC Long  | Split Long  |



Right angle plug sideview depicted

**Summary**

Configuration:  
R/A to Vertical

Type of Tails:  
Solder tails (R/A plug)  
Pressfit  
(Vertical Receptacle)

Guides:  
End

Signal Module Placement:  
Middle

Total Signal Pins:  
10

Total Power Blades:  
0 AC / 4 DC / 0 Split

Total Amps Requirement:  
3A

Connector Length:  
47.21 (mm) / 1.86 (in)

## FURTHER INFORMATION



EXTreme Products



EXTreme Ten60 Products



EXTreme Ten60 Configurator

A man and a woman are sitting at a table in a kitchen, looking at a laptop screen. The man is on the left, wearing a dark shirt, and the woman is on the right, wearing a light-colored shirt. They are both looking at the laptop screen. The background shows a kitchen with shelves and a window.

*creating connections for life*

**THANK YOU**

Contact info here

**molex**

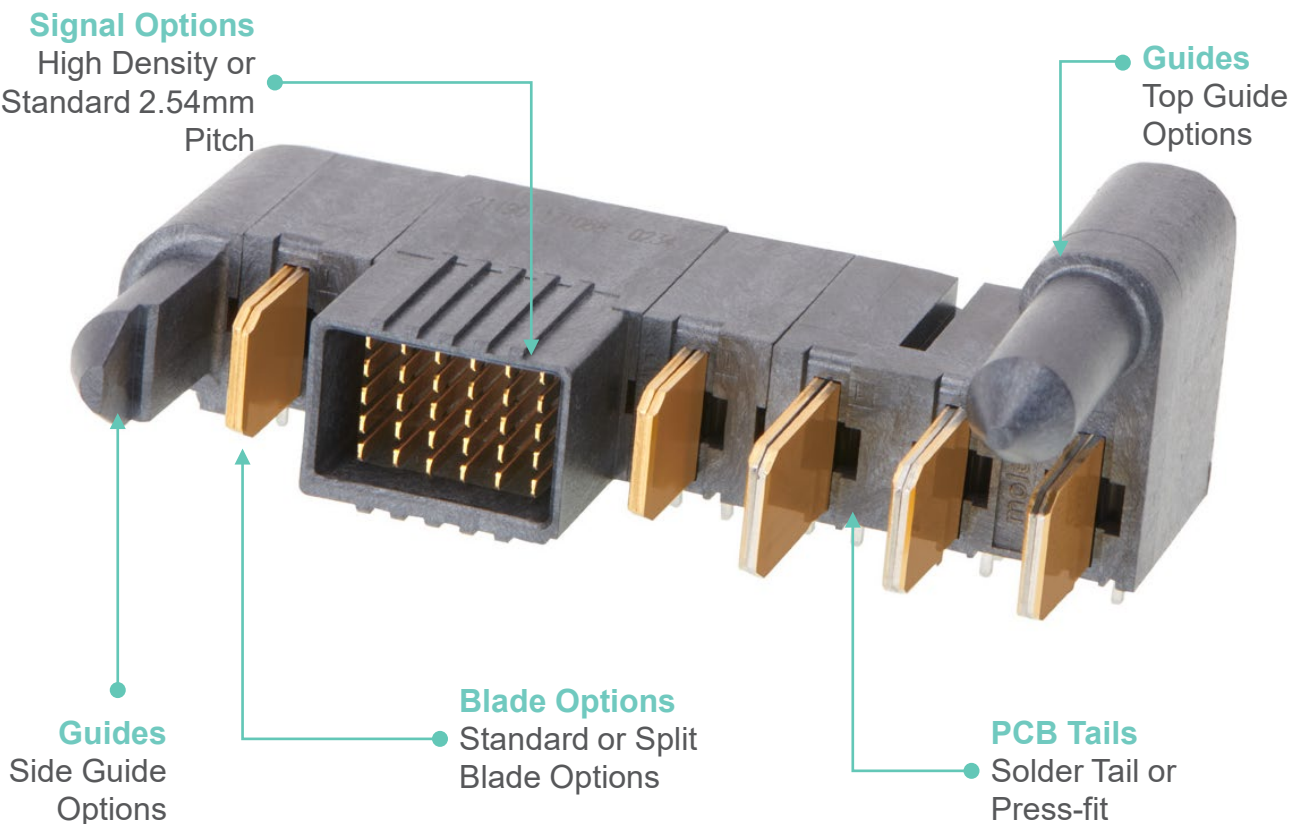


**molex**

# EXTreme Ten60 CONFIGURABLE POWER CONNECTORS

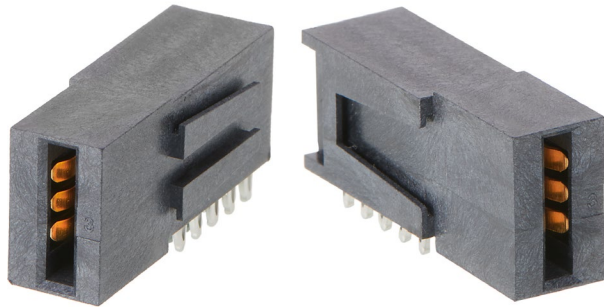
Type: High Power Board to Board & Wire to Board

|                              |                        |
|------------------------------|------------------------|
| Pitch (mm)                   | 5.50, 6.00, 7.50       |
| Power Circuit size           | 1 to 10+               |
| Mated Height (mm)            | 10                     |
| Mated Depth (mm)             | 29                     |
| Durability                   | 200 Cycles             |
| Current                      | 95 amps                |
| Voltage (UL Rating)          | 250V (DC) or 600V (AC) |
| Plating                      | Gold                   |
| Minimum Mating Force (N)     | 443g/ckt               |
| Minimum Withdrawal Force (N) | 316g/ckt               |
| Operating Temperature        | -40 to 105C            |



# FEATURES AND ADVANTAGES

1



## Configurable

Supreme Flexibility by incorporating a Dove Tail design into each connector

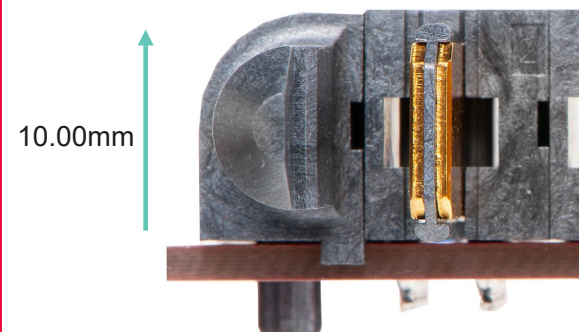
2



## Alignment

easy to mate and prevents damage  
For Side Guide & Top guide

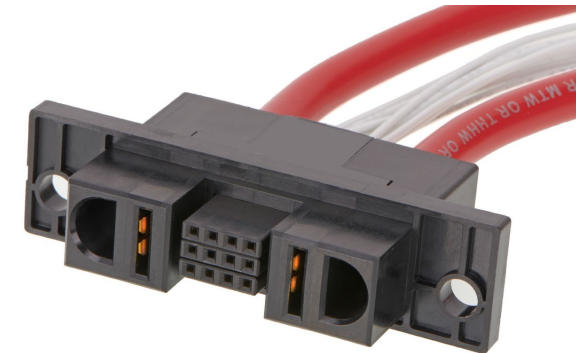
3



## Airflow

Allows for optimum cooling due to low profile heights

4



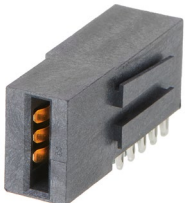
## Wire To Board Options:

Receptacles and Panel Mount Crimp Options available



# GENERAL MARKET OFFERING (NEW RELEASE) STANDARD POWER ORDER CHART

| Configuration | Right Angle Plug | Right Angle Receptacle | Vertical Receptacle | Right Angle Plug | Right Angle Receptacle | Vertical Receptacle |
|---------------|------------------|------------------------|---------------------|------------------|------------------------|---------------------|
|               | Guided           |                        |                     | Unguided         |                        |                     |
| 1P            | 464379301        | 464369301              | 465629301           | 464379201        | 464369201              | 465629201           |
| 2P            | 464379302        | 464369302              | 465629302           | 464379202        | 464369202              | 465629202           |
| 3P            | 464379303        | 464369303              | 465629303           | 464379203        | 464369203              | 465629203           |
| 4P            | 464379304        | 464369304              | 465629304           | 464379204        | 464369204              | 465629204           |
| 5P            | 464379305        | 464369305              | 465629305           | 464379205        | 464369205              | 465629205           |
| 6P            | 464379306        | 464369306              | 465629306           | 464379206        | 464369206              | 465629206           |
| 7P            | 464379307        | 464369307              | 465629307           | 464379207        | 464369207              | 465629207           |
| 8P            | 464379308        | 464369308              | 465629308           | 464379208        | 464369208              | 465629208           |
| 9P            | 464379309        | 464369309              | 465629309           | 464379209        | 464369209              | 465629209           |
| 10P           | 464379310        | 464369310              | 465629310           | 464379210        | 464369210              | 465629210           |



## GENERAL MARKET OFFERING (NEW RELEASE) SPLIT POWER & TOP GUIDE CHART

| Configuration | Right Angle Plug | Right Angle Receptacle | Vertical Receptacle | Right Angle Plug | Right Angle Receptacle | Vertical Receptacle |
|---------------|------------------|------------------------|---------------------|------------------|------------------------|---------------------|
|               | Split Power      |                        |                     | Top Guides       |                        |                     |
| 1P            | 1710889301       | 1710899301             | 1710909301          | 464379331        | 464369331              | 465629331           |
| 2P            | 1710889302       | 1710899302             | 1710909302          | 464379332        | 464369332              | 465629332           |
| 3P            | 1710889303       | 1710899303             | 1710909303          | 464379333        | 464369333              | 465629333           |
| 4P            | 1710889304       | 1710899304             | 1710909304          | 464379334        | 464369334              | 465629334           |
| 5P            | 1710889305       | 1710899305             | 1710909305          | 464379335        | 464369335              | 465629335           |
| 6P            | 1710889306       | 1710899306             | 1710909306          | 464379336        | 464369336              | 465629336           |
| 7P            | 1710889307       | 1710899307             | 1710909307          | 464379337        | 464369337              | 465629337           |
| 8P            | 1710889308       | 1710899308             | 1710909308          | 464379338        | 464369338              | 465629338           |
| 9P            | 1710889309       | 1710899309             | 1710909309          | 464379339        | 464369339              | 465629339           |
| 10P           | 1710889310       | 1710899310             | 1710909310          | 464379340        | 464369340              | 465629340           |

# GENERAL MARKET OFFERING (NEW RELEASE) HYBRID CONFIGURATION ORDER CHART

| Configuration | Right Angle Plug | Right Angle Receptacle | Vertical Receptacle | Right Angle Plug | Right Angle Receptacle | Vertical Receptacle | Right Angle Plug | Right Angle Receptacle | Vertical Receptacle |
|---------------|------------------|------------------------|---------------------|------------------|------------------------|---------------------|------------------|------------------------|---------------------|
|               | Standard Power   |                        |                     | Split Power      |                        |                     | Top Guide        |                        |                     |
| G-1P-15S-G    | 464379311        | 464369311              | 465629311           | 1710889311       | 1710899311             | 1710909311          | 464379341        | 464369341              | 465629341           |
| G-2P-15S-G    | 464379312        | 464369312              | 465629312           | 1710889312       | 1710899312             | 1710909312          | 464379342        | 464369342              | 465629342           |
| G-3P-15S-G    | 464379313        | 464369313              | 465629313           | 1710889313       | 1710899313             | 1710909313          | 464379343        | 464369343              | 465629343           |
| G-4P-15S-G    | 464379314        | 464369314              | 465629314           | 1710889314       | 1710899314             | 1710909314          | 464379344        | 464369344              | 465629344           |
| G-5P-15S-G    | 464379315        | 464369315              | 465629315           | 1710889315       | 1710899315             | 1710909315          | 464379345        | 464369345              | 465629345           |
| G-1P-30S-G    | 464379316        | 464369316              | 465629316           | 1710889316       | 1710899316             | 1710909316          | 464379346        | 464369346              | 465629346           |
| G-2P-30S-G    | 44379317         | 464369317              | 465629317           | 1710889317       | 1710899317             | 1710909317          | 464379347        | 464369347              | 465629347           |
| G-3P-30S-G    | 464379318        | 464369318              | 465629318           | 1710889318       | 1710899318             | 1710909318          | 464379348        | 464369348              | 465629348           |
| G-4P-30S-G    | 464379319        | 464369319              | 465629319           | 1710889319       | 1710899319             | 1710909319          | 464379349        | 464369349              | 465629349           |
| G-5P-30S-G    | 464379320        | 464369320              | 465629320           | 1710889320       | 1710899320             | 1710909320          | 464379350        | 464369350              | 465629350           |
| G-1P-15S-1P-G | 464379321        | 464369321              | 465629321           | 1710889321       | 1710899321             | 1710909321          | 464379351        | 464369351              | 465629351           |
| G-2P-15s-2P-G | 464379322        | 464369322              | 465629322           | 1710889322       | 1710899322             | 1710909322          | 464379352        | 464369352              | 465629352           |
| G-3P-15s-3P-G | 464379323        | 464369323              | 465629323           | 1710889323       | 1710899323             | 1710909323          | 464379353        | 464369353              | 465629353           |
| G-4P-15s-4P-G | 464379324        | 464369324              | 465629324           | 1710889324       | 1710899324             | 1710909324          | 464379354        | 464369354              | 465629354           |
| G-5P-15s-5P-G | 464379325        | 464369325              | 465629325           | 1710889325       | 1710899325             | 1710909325          | 464379355        | 464369355              | 465629355           |
| G-1P-30S-1P-G | 464379326        | 464369326              | 465629326           | 1710889326       | 1710899326             | 1710909326          | 464379356        | 464369356              | 465629356           |
| G-2P-30s-2P-G | 464379327        | 464369327              | 465629327           | 1710889327       | 1710899327             | 1710909327          | 464379357        | 464369357              | 465629357           |
| G-3P-30s-3P-G | 464379328        | 464369328              | 465629328           | 1710889328       | 1710899328             | 1710909328          | 464379358        | 464369358              | 465629358           |
| G-4P-30s-4P-G | 464379329        | 464369329              | 465629329           | 1710889329       | 1710899329             | 1710909329          | 464379359        | 464369359              | 465629359           |
| G-5P-30s-5P-G | 464379330        | 464369330              | 465629330           | 1710889330       | 1710899330             | 1710909330          | 464379360        | 464369360              | 465629360           |



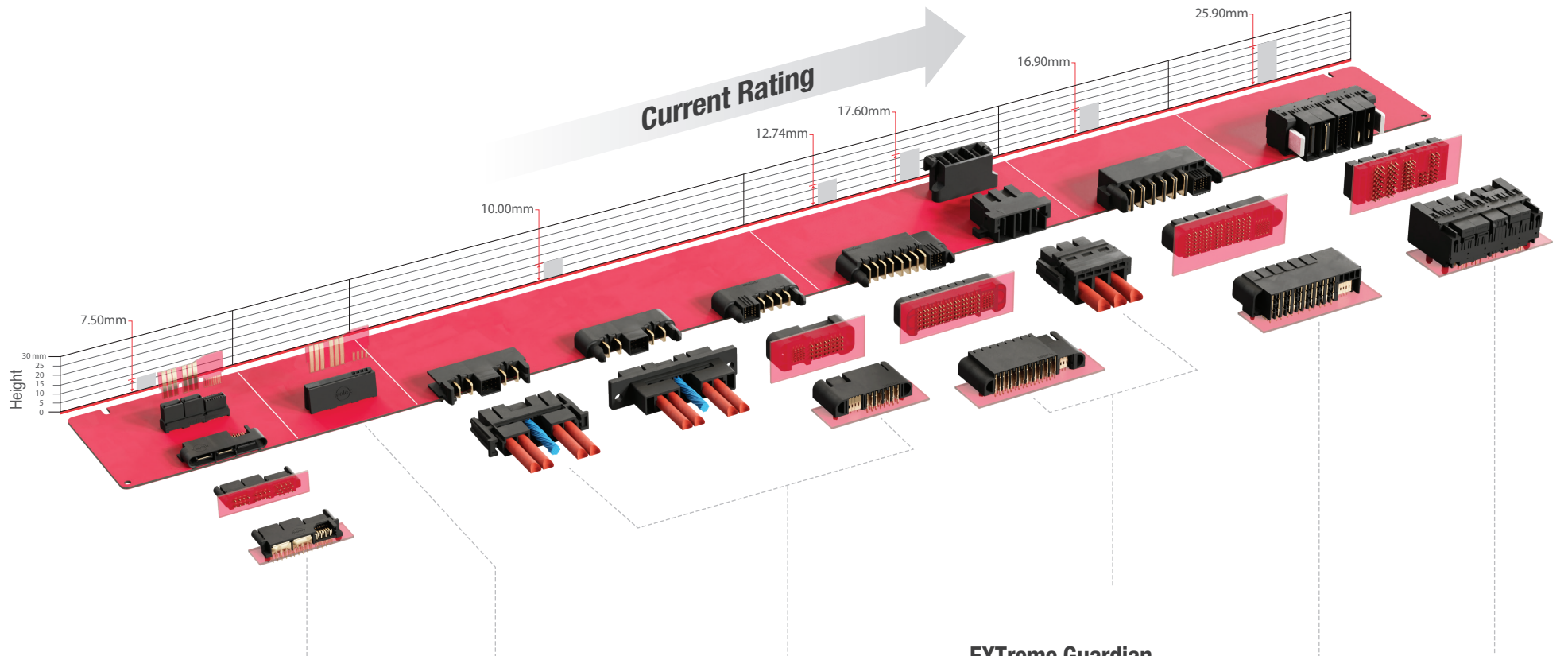
## WIRE TO BOARD PART# MATRIX

| Configuration | Receptacle   |                                           |                |                 |            | Plug        |
|---------------|--------------|-------------------------------------------|----------------|-----------------|------------|-------------|
| Configuration | Receptacle   |                                           |                |                 |            | Plug        |
|               | Main Housing | Power Terminal                            | Signal Housing | Signal Terminal | TPA        |             |
| 2P            | 172509-0222  | 173693-4634<br>173693-4632<br>173693-4636 | N/A            | N/A             | 46708-3200 | 172452-0002 |
| 3P            | 172509-0223  |                                           | N/A            | N/A             | 46708-3300 | 172452-0003 |
| 4P            | 172509-0224  |                                           | N/A            | N/A             | 46708-3400 | 172452-0004 |
| 5P            | 172509-0225  |                                           | N/A            | N/A             | 46708-3500 | 172452-0005 |
| 6P            | 172509-0226  |                                           | N/A            | N/A             | 46708-3600 | 172452-0006 |
| 2P-12S        | 172510-3212  | 173693-4634<br>173693-4632<br>173693-4636 | 46709-0004     | 70058 Series    | 46708-3212 | 172510-0212 |
| 2P-18S        | 172510-3218  |                                           | 46709-0006     |                 | 46708-3218 | 172453-0218 |
| 2P-24S        | 172510-3224  |                                           | 46709-0008     |                 | 46708-3224 | 172453-0224 |
| 4P-12S        | 172510-3412  |                                           | 46709-0004     |                 | 46708-3412 | 172453-0412 |
| 4P-18S        | 172510-3418  |                                           | 46709-0006     |                 | 46708-3418 | 172453-0418 |
| 4P-24S        | 172510-3424  |                                           | 46709-0008     |                 | 46708-3424 | 172453-0424 |
| 6P-12S        | 172510-3612  |                                           | 46709-0004     |                 | 46708-3612 | 172453-0612 |
| 6P-18S        | 172510-3618  |                                           | 46709-0006     |                 | 46708-3618 | 172453-0618 |

## PANEL TO BOARD PART# MATRIX

| Configuration | Receptacle   |                                           |                |                 |            | Plug        |
|---------------|--------------|-------------------------------------------|----------------|-----------------|------------|-------------|
|               | Main Housing | Power Terminal                            | Signal Housing | Signal Terminal | TPA        |             |
| 2P            | 172511-0002  | 173693-4634<br>173693-4632<br>173693-4636 | N/A            | N/A             | 46708-3200 | 172457-0002 |
| 3P            | 172511-0003  |                                           | N/A            | N/A             | 46708-3300 | 172457-0003 |
| 4P            | 172511-0004  |                                           | N/A            | N/A             | 46708-3400 | 172457-0004 |
| 5P            | 172511-0005  |                                           | N/A            | N/A             | 46708-3500 | 172457-0005 |
| 6P            | 172511-0006  |                                           | N/A            | N/A             | 46708-3600 | 172457-0006 |
| 2P-12S        | 172512-3212  | 173693-4634<br>173693-4632<br>173693-4636 | 46709-0004     | 70058 Series    | 46708-3212 | 172458-0212 |
| 2P-18S        | 172512-3218  |                                           | 46709-0006     |                 | 46708-3218 | 172458-0218 |
| 2P-24S        | 172512-3224  |                                           | 46709-0008     |                 | 46708-3224 | 172458-0224 |
| 4P-12S        | 172512-3412  |                                           | 46709-0004     |                 | 46708-3412 | 172458-0412 |
| 4P-18S        | 172512-3418  |                                           | 46709-0006     |                 | 46708-3418 | 172458-0418 |
| 4P-24S        | 172512-3424  |                                           | 46709-0008     |                 | 46708-3424 | 172458-0424 |
| 6P-12S        | 172512-3612  |                                           | 46709-0004     |                 | 46708-3612 | 172458-0612 |
| 6P-18S        | 172512-3618  |                                           | 46709-0006     |                 | 46708-3618 | 172458-0618 |
| 6P-24S        | 172512-3624  |                                           | 46709-0008     |                 | 46708-3624 | 172458-0624 |

# EXTreme Power Products



## EXTreme LPHPower

Current Rating:  
30.0A / Blade  
50.0A / cm

Profile Height: 7.50mm  
Voltage (max): 250V

## EXTreme PowerEdge

Current Rating:  
40.0A / Blade  
62.0A / cm

Voltage (max): 250V

## EXTreme Ten60Power

Current Rating:  
60.0A / Blade  
109.0A / cm

Profile Height: 10.00mm  
Voltage (max): 600V

## EXTreme Guardian

Board-to-Board

Current Rating:  
80.0A / Blade  
155.0A / cm

Profile Height: 12.74mm  
Voltage (max): 120V

Wire-to-Board

Current Rating:  
80.0A / Blade  
73.0A / cm

Profile Height: 17.60mm  
Voltage (max): 600V

## EXTreme EnergetiC

Current Rating:  
100.0A / Blade  
130.0A / cm

Profile Height: 16.90mm  
Voltage (max): 320V

## EXTreme PowerMass

Current Rating:  
150.0A / Blade  
150.0A / cm

Profile Height: 25.90mm  
Voltage (max): 600V