

- 20 A and 30 A Cable Options Available
- Standard Voltage up to 600 V AC
- Cable Connectors
- PCB Connectors
- Guaranteed Compatibility

Simple Connection

Pickering connection solutions provide a simple way of connecting to a user's device under test or remote connection. The products include cable assemblies, cable connectors, pcb connectors and tools.

Cable Assemblies

20 A and 30 A Cable assemblies are offered in connector to connector, and connector to unterminated versions. There are 2 termination options for the unterminated cables - tinned copper or simple cut end.



Custom Design Needs



Pickering Interfaces can manufacture custom connector accessories to suit any application. If you do not see what you need in this data sheet contact your Pickering Interfaces sales office with information on your requirements or consider using our free online Cable Design Tool.

Using our Cable Design Tool, you can graphically design your own custom cable assembly. Once completed and submitted, our engineers will generate a quote for your cable requirements. See pickeringtest.com/cdt




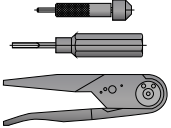


Example of a Pickering PXI Product using a 20-Pin Scorpion Connector

Cable Assemblies

| Description | | End 1 | End 2 | | Cable Length | Product Order Code and Part Number | Data Sheet Page |
|---|--|---------------------|---------------------|------------|---------------------|--|-------------------|
| | | Gender & Cable Exit | Gender & Cable Exit | Options | | | |
|  | Cable Assy, 20-Pin Scorpion, 20 A | Male, Rear | Female, Rear | - | 0.5 m 1 m 2 m | A020AMR-020AFR-2A050 A020AMR-020AFR-2A100 A020AMR-020AFR-2A200 | 3 |
| | Cable Assy, 20-Pin Scorpion, 30 A | Male, Rear | Female, Rear | - | 0.5 m 1 m 2 m | A020AMR-020AFR-3A050 A020AMR-020AFR-3A100 A020AMR-020AFR-3A200 | 4 |
|  | Cable Assy, 20-Pin Scorpion to Underterminated, 20 A | Female, Rear | N/A | Tinned End | 0.5 m 1 m 2 m | A020AFR-T-2A050 A020AFR-T-2A100 A020AFR-T-2A200 | 5 |
| | | | | Cut End | 0.5 m 1 m 2 m | A020AFR-C-2A050 A020AFR-C-2A100 A020AFR-C-2A200 | |
| | Cable Assy, 20-Pin Scorpion to Underterminated, 30 A | Female, Rear | N/A | Tinned End | 0.5 m 1 m 2 m | A020AFR-T-3A050 A020AFR-T-3A100 A020AFR-T-3A200 | 6 |
| | | | | Cut End | 0.5 m 1 m 2 m | A020AFR-C-3A050 A020AFR-C-3A100 A020AFR-C-3A200 | |

Note: Custom lengths by quotation

Female Connectors and Tools

| Description | | Gender & Cable Exit | Type | Product Order Code and Part Number | Page |
|---|--|---------------------|-----------------------|------------------------------------|--------------------|
|  | Cable Connector 20-Pin Scorpion, 20 A, Crimp Contact | Female, Rear | With Backshell | C020AFR-2CP-2A | 7 |
| | Cable Connector 20-Pin Scorpion, 30 A, Crimp Contact | Female, Rear | With Backshell | C020AFR-2CP-3A | 8 |
|  | Pin Extractor Tool | - | - | C020AFR-2CP-2A-E | 8 |
| | Pin Insertion Tool | - | - | C020AFR-2CP-2A-I | |
| | Hand Crimp Tool | - | - | C020AFR-2CP-2A-O | |
|  | PCB Connector 20-Pin Scorpion, 20 A | Female | Right Angle PCB Mount | C020AFX-2PR-2A | 9 |
| | | Female | Straight PCB Mount | C020AFX-2PS-2A | 10 |
|  | PCB Connector 20-Pin Scorpion, 30 A | Female | Right Angle PCB Mount | C020AFX-2PR-3A | 11 |
| | | Female | Straight PCB Mount | C020AFX-2PS-3A | 12 |

Custom Termination

Customization Possibilities [13](#)

Please click on the page number to navigate to the data sheet page required. Return to this page via the **C** button.

- High Specification, Highly Flexible Cable
- Fully Screened Cable Construction with Strain Relief
- Rear Cable Exit

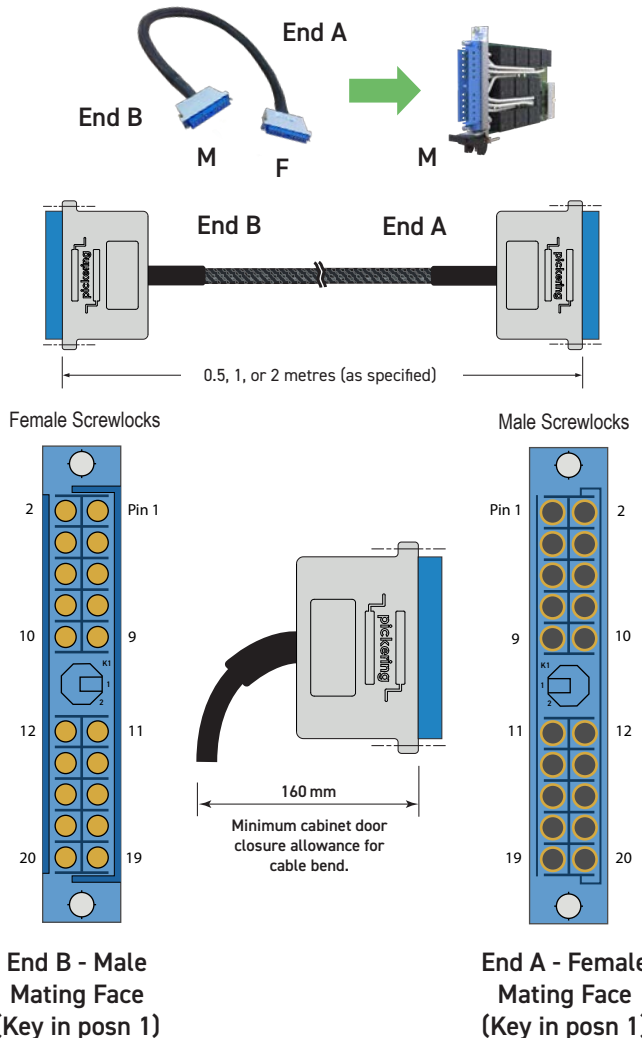
Technical Specification

| | |
|---------------------------|--|
| Connector Type (End A): | 20-Pin Scorpion |
| Gender | Female |
| Keying Position | Position 1 (20 A products) |
| Securing Method | 4-40 UNC screwlocks, male |
| Connector Type (End B): | 20-Pin Scorpion |
| Gender | Male |
| Keying Position | Position 1 (20 A products) |
| Securing Method | 4-40 UNC screwlocks, male |
| Maximum Current | 20 A |
| Maximum Voltage | 500 Vrms/500 VDC |
| Connectors: | |
| Contact Material | Gold plated copper alloy |
| Contact Resistance | <1 mOhm |
| Cable Exit | Rear |
| Overall Size (Approx) | H89.5 x W18.7 x D62 mm |
| Cable Type: | Individual wires, screened & sleeved |
| Conductor: Material | Silver plated copper |
| Strands | 37/26 (10AWG) |
| Resistance | 3.9 Ω/km |
| Insulation | PTFE, 0.139 inch dia |
| Outer Sleeve | Expandable Polyester Braid |
| Screened Construction | Yes (Cable screen connected to backshells) |
| Additional Braided Sleeve | Yes |
| Cable O/D | 19 mm |
| Minimum Bend Radius | 140 mm |
| Door Closure Allowance | 160 mm |



20 A Scorpion Cable Assy (Female to Female depicted)

Product Compatibility



End B - Male Mating Face (Key in posn 1)

End A - Female Mating Face (Key in posn 1)

Product Order Codes

- 20-Pin Scorpion Cable Assy, 20 A, Male to Female, Rear Exit,
 0.5 m Long [A020AMR-020AFR-2A050](#)
 1.0 m Long [A020AMR-020AFR-2A100](#)
 2.0 m Long [A020AMR-020AFR-2A200](#)

Note: Other cable lengths can be supplied.

- High Specification, Highly Flexible Cable
- Fully Screened Cable Construction with Strain Relief
- Rear Cable Exit

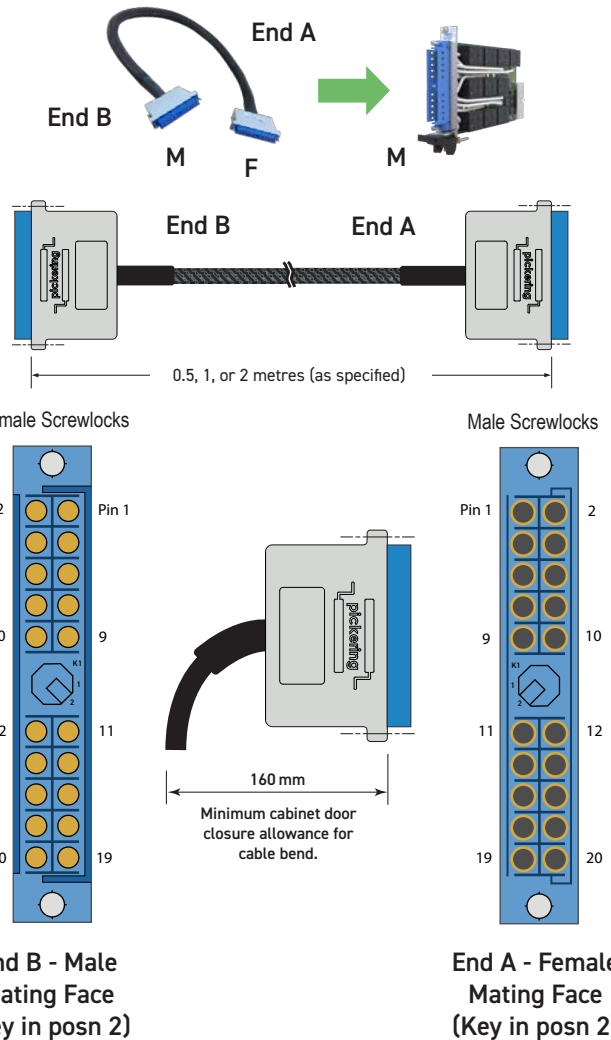
Technical Specification

| | |
|---------------------------|--|
| Connector Type (End A): | 20-Pin Scorpion |
| Gender | Female |
| Keying Position | Position 2 (30A products) |
| Securing Method | 4-40 UNC screwlocks, male |
| Connector Type (End B): | 20-Pin Scorpion |
| Gender | Male |
| Keying Position | Position 2 (30A products) |
| Securing Method | 4-40 UNC screwlocks, male |
| Maximum Current | 30 A |
| Maximum Voltage | 600 Vrms/600 VDC |
| Connectors: | |
| Contact Material | Gold plated copper alloy |
| Contact Resistance | <1mOhm |
| Cable Exit | Rear |
| Overall Size (Approx) | H89.5 x W18.7 x D62 mm |
| Cable Type: | Individual wires, screened & sleeved |
| Conductor: Material | Silver plated copper |
| Strands | 37/26 (10AWG) |
| Resistance | 3.9 Ω/km |
| Insulation | PTFE, 0.139 inch dia |
| Outer Sleeve | Expandable Polyester Braid |
| Screened Construction | Yes (Cable screen connected to backshells) |
| Additional Braided Sleeve | Yes |
| Cable O/D | 19 mm |
| Minimum Bend Radius | 140 mm |
| Door Closure Allowance | 160 mm |



30 A Scorpion Cable Assy (Female to Female depicted)

Product Compatibility



Product Order Codes

- 20-Pin Scorpion Cable Assy, 30 A, Male to Female, Rear Exit,
- 0.5 m Long [A020AMR-020AFR-3A050](#)
 - 1.0 m Long [A020AMR-020AFR-3A100](#)
 - 2.0 m Long [A020AMR-020AFR-3A200](#)

Note: Other cable lengths can be supplied.

- High Specification, Highly Flexible Cable
- Fully Screened Cable Construction with Strain Relief
- Rear Cable Exit
- Fully Coded Markers to Ensure Easy Connection



20 A Scorpion Cable Assy - Female to Unterminated

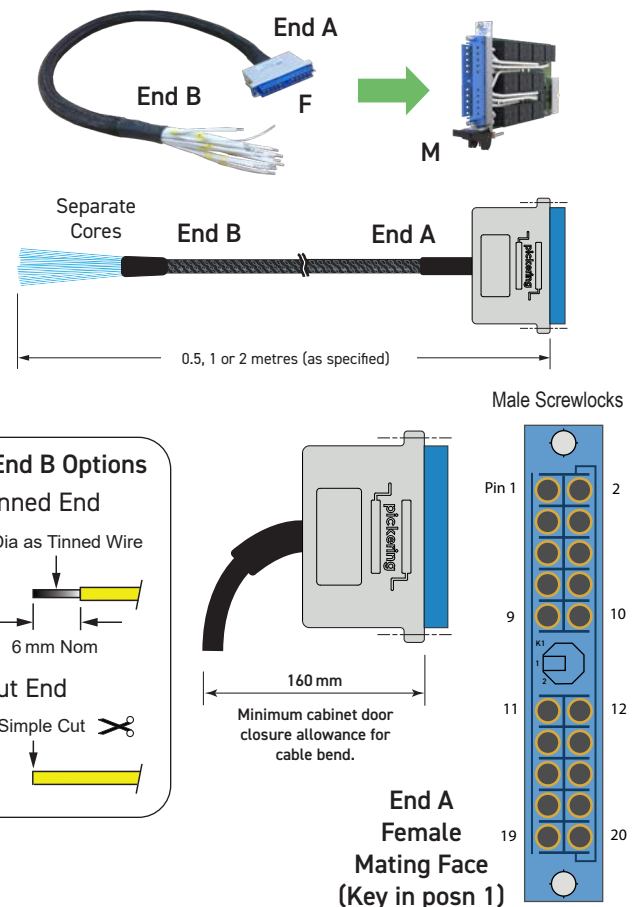
Note: For 20 A products the connector key is in Position 1.

Technical Specification

| | |
|----------------------------|---|
| Connector Type (End A): | 20-Pin Scorpion |
| Gender: | Female |
| Keying Position: | Position 1 (20 A products) |
| Securing Method: | 4-40 UNC screwlocks, male |
| Unterminated End (End B): | |
| Wire End Options: | Tinned and Cut End |
| Free Wire Length: | 130 mm nominal |
| Individual Wire Labelling: | To connector pins A white/black screen pigtail is included |
| Maximum Current: | 20 A |
| Maximum Voltage: | 500 Vrms/500 VDC |
| Connector: | |
| Contact Material: | Gold plated copper alloy |
| Contact Resistance: | <1 mOhm |
| Cable Exit: | Rear |
| Overall Size (Approx): | H89.5 x W18.7 x D62 mm |
| Cable Type: | Individual wires, screened & sleeved |
| Conductor: Material: | Silver plated copper |
| Strands: | 37/26 (10AWG) |
| Resistance: | 3.9 Ω/km |
| Insulation: | PTFE, 0.139 inch dia |
| Outer Sleeve: | Expandable Polyester Braid |
| Screened Construction: | Yes (Cable screen connected to backshell) |
| Additional Braided Sleeve: | Yes |
| Cable O/D: | 19 mm |
| Minimum Bend Radius: | 140 mm |
| Door Closure Allowance: | 160 mm |

Note: When using this product please ensure appropriate electrical safety.

Product Compatibility



Product Order Codes

| | |
|--|---------------------------------|
| 20-Pin Scorpion Cable Assy, 20 A, Rear Cable Exit, Female to Unterminated, Tinned End, 0.5 m | A020AFR-T-2A050 |
| Female to Unterminated, Tinned End, 1.0 m | A020AFR-T-2A100 |
| Female to Unterminated, Tinned End, 2.0 m | A020AFR-T-2A200 |
| Female to Unterminated, Cut End, 0.5 m | A020AFR-C-2A050 |
| Female to Unterminated, Cut End, 1.0 m | A020AFR-C-2A100 |
| Female to Unterminated, Cut End, 2.0 m | A020AFR-C-2A200 |

Note: Other cable lengths can be supplied.

- High Specification, Highly Flexible Cable
- Fully Screened Cable Construction with Strain Relief
- Rear Cable Exit
- Fully Coded Markers to Ensure Easy Connection



30 A Scorpion Cable Assy - Female to Unterminated

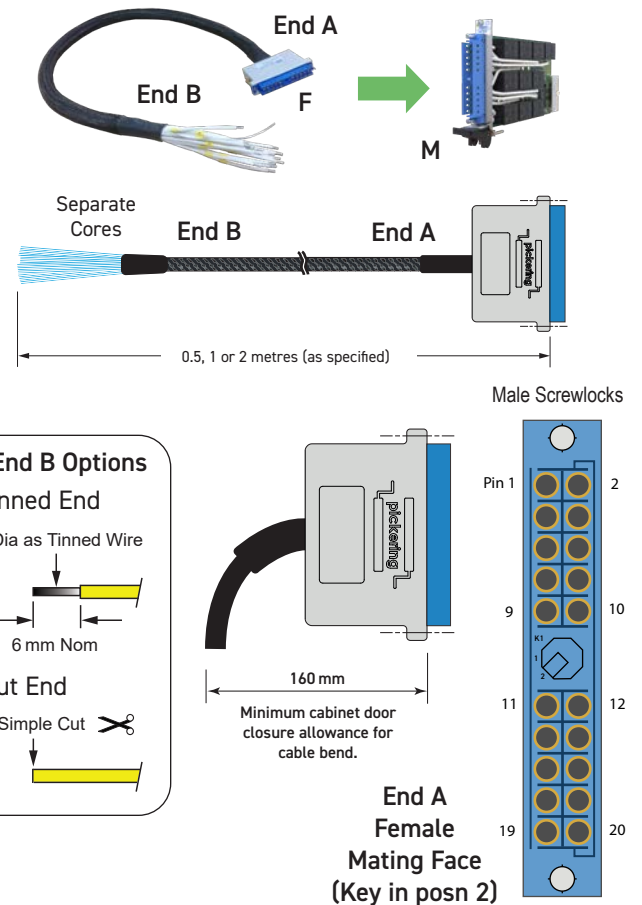
Note: For 30 A products the connector key is in Position 2.

Technical Specification

| | |
|----------------------------|---|
| Connector Type (End A): | 20-Pin Scorpion |
| Gender: | Female |
| Keying Position: | Position 2 (30 A products) |
| Securing Method: | 4-40 UNC screwlocks, male |
| Unterminated End (End B): | |
| Wire End Options: | Tinned and Cut End |
| Free Wire Length: | 130 mm nominal |
| Individual Wire Labelling: | To connector pins A white/black screen pigtail is included |
| Maximum Current: | 30 A |
| Maximum Voltage: | 600 Vrms/600 VDC |
| Connector: | |
| Contact Material: | Gold plated copper alloy |
| Contact Resistance: | <1 mOhm |
| Cable Exit: | Rear |
| Overall Size (Approx): | H89.5 x W18.7 x D62 mm |
| Cable Type: | Individual wires, screened & sleeved |
| Conductor: Material: | Silver plated copper |
| Strands: | 37/26 (10AWG) |
| Resistance: | 3.9 Ω/km |
| Insulation: | PTFE, 0.139 inch dia |
| Outer Sleeve: | Expandable Polyester Braid |
| Screened Construction: | Yes (Cable screen connected to backshell) |
| Additional Braided Sleeve: | Yes |
| Cable O/D: | 19 mm |
| Minimum Bend Radius: | 140 mm |
| Door Closure Allowance: | 160 mm |

Note: When using this product please ensure appropriate electrical safety.

Product Compatibility



Product Order Codes

| | |
|--|---------------------------------|
| 20-Pin Scorpion Cable Assy, 30 A, Rear Cable Exit, Female to Untermin, Tinned End, 0.5 m | A020AFR-T-3A050 |
| Female to Untermin, Tinned End, 1.0 m | A020AFR-T-3A100 |
| Female to Untermin, Tinned End, 2.0 m | A020AFR-T-3A200 |
| Female to Untermin, Cut End, 0.5 m | A020AFR-C-3A050 |
| Female to Untermin, Cut End, 1.0 m | A020AFR-C-3A100 |
| Female to Untermin, Cut End, 2.0 m | A020AFR-C-3A200 |

Note: Other cable lengths can be supplied.

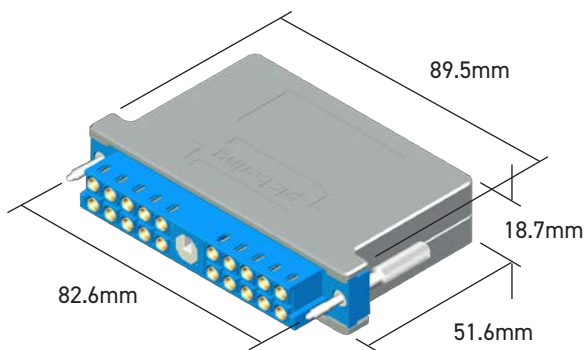
- Connector and Backshell
- Male Screwlocks
- Cable Clamp in Backshell
- Crimped Cable Termination

This accessory is designed to allow users to directly terminate with crimped connections to the connector.

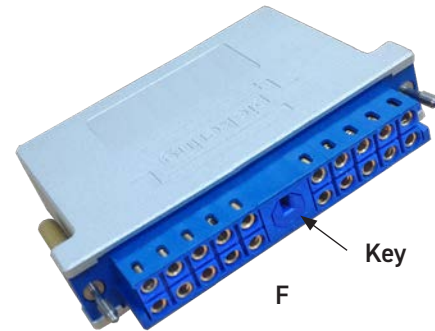
When the product is used without a backshell users should make their own cable strain relief arrangements and ensure appropriate electrical safety precautions are observed.

Technical Specification

| | |
|---------------------------|--|
| Connector Type: | 20-Pin Scorpion |
| Gender | Female |
| Keying Position | Position 1 (20 A products) |
| Securing Method: | |
| Product with Backshell | 4-40 UNC screwlocks, male |
| Product without Backshell | 4-40 UNC screwlocks, male |
| Wire Connection | Crimp contact |
| Cable Screen Connection | Solder ring terminal |
| Connector Ratings: | |
| Maximum Current | 20 A |
| Maximum Voltage | 600 Vrms |
| Cable Exit: | Rear |
| Cable Exit Size | 38.5 x 15 mm |
| Overall Size (Approx) | H89.5 x W18.7 x D62 mm |
| 20-Pin Scorpion: | |
| Contact Material | Gold flash over nickel on copper alloy |
| Contact Resistance | 1mOhm |
| Wire Connection: | |
| Maximum Wire Size | 10AWG |
| Recommended Insulation | PTFE |
| Additional Cable Clamp | Yes (in backshell) |



Connector Dimensions

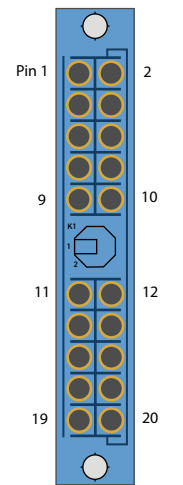


20 A Scorpion Cable Connector - Female

Note: For 20 A products the connector key is in Position 1.



Female Crimp Contact
Gold Flash over Nickel



Female
Mating Face
(Key in posn 1)

Product Order Codes

| | |
|--|----------------------------------|
| 20-Pin Scorpion Connector, 20 A, Crimp Pin, With Backshell, Female | C020AFR-2CP-2A |
| Pin Extractor Tool (See page 8) | C020AFR-2CP-2A-E |
| Crimp Tool (See page 8) | C020AFR-2CP-2A-O |
| Pin Insertion Tool (See page 8) | C020AFR-2CP-2A-I |

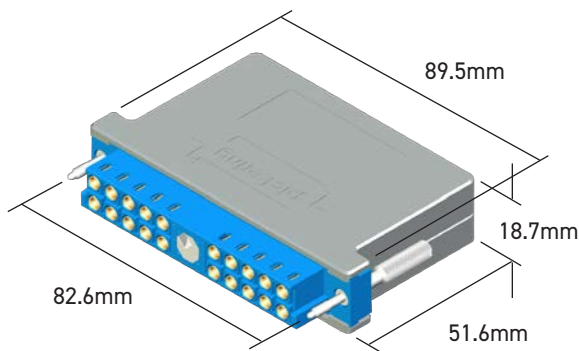
- Connector and Backshell
- Male Screwlocks
- Cable Clamp in Backshell
- Crimped Cable Termination

This accessory is designed to allow users to directly terminate with crimped connections to the connector.

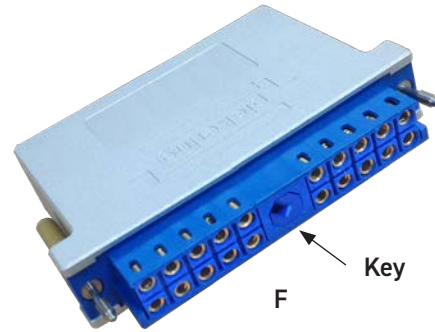
When the product is used without a backshell users should make their own cable strain relief arrangements and ensure appropriate electrical safety precautions are observed.

Technical Specification

| | |
|---------------------------|--|
| Connector Type: | 20-Pin Scorpion |
| Gender | Female |
| Keying Position | Position 1 (20 A products) |
| Securing Method: | |
| Product with Backshell | 4-40 UNC screwlocks, male |
| Product without Backshell | 4-40 UNC screwlocks, male |
| Wire Connection | Crimp contact |
| Cable Screen Connection | Solder ring terminal |
| Connector Ratings: | |
| Maximum Current | 30 A |
| Maximum Voltage | 600 Vrms |
| Cable Exit: | Rear |
| Cable Exit Size | 38.5 x 15 mm |
| Overall Size (Approx) | H89.5 x W18.7 x D62 mm |
| 20-Pin Scorpion: | |
| Contact Material | Gold flash over nickel on copper alloy |
| Contact Resistance | 1 mOhm |
| Wire Connection: | |
| Maximum Wire Size | 10AWG |
| Recommended Insulation | PTFE |
| Additional Cable Clamp | Yes (in backshell) |

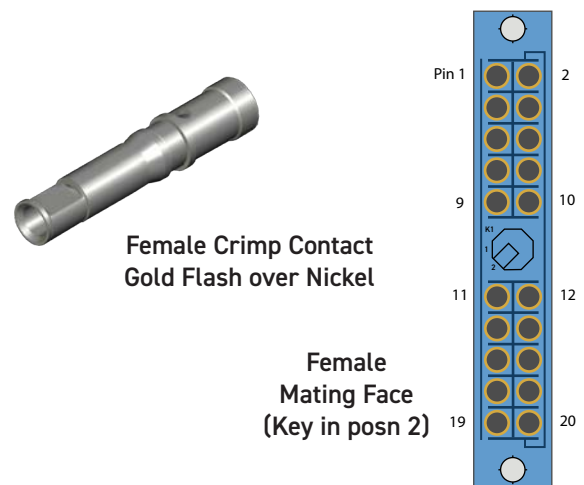


Connector Dimensions

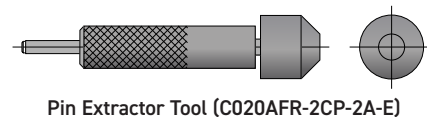


30 A Scorpion Cable Connector - Female

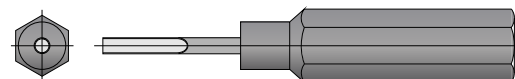
Note: For 30 A products the connector key is in Position 2.



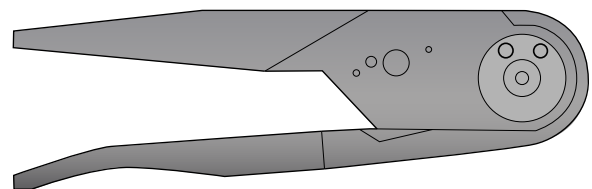
Tools



Pin Extractor Tool (C020AFR-2CP-2A-E)



Pin Insertion Tool (C020AFR-2CP-2A-I)



Hand Crimp Tool (C020AFR-2CP-2A-O)

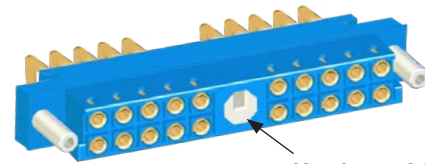
Product Order Codes

| | |
|--|----------------------------------|
| 20-Pin Scorpion Connector, 30 A, Crimp Pin, With Backshell, Female | C020AFR-2CP-3A |
| Pin Extractor Tool | C020AFR-2CP-2A-E |
| Crimp Tool | C020AFR-2CP-2A-O |
| Pin Insertion Tool | C020AFR-2CP-2A-I |

- Right Angle PCB Mount
- Ideal for User Created Termination Solutions

This accessory allows a user to create their own PCB based termination solution mounted on the end of a cable. Suitable cables for this product are contained elsewhere in this data sheet. Interfacing PCBs should be designed with suitable clearances for the voltage the application requires.

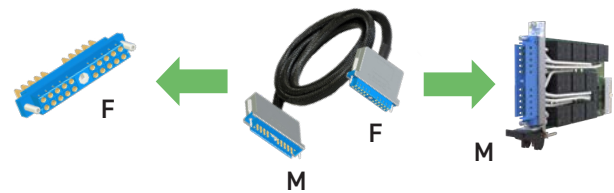
Note: This product is not suitable for directly mounting onto the front panel of a Pickering switching product.



Key in position 1 (20 A)

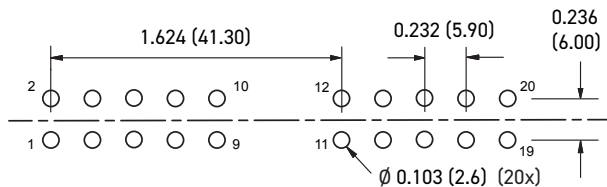
20 A Scorpion PCB Connector, Right Angle - Female

Product Compatibility



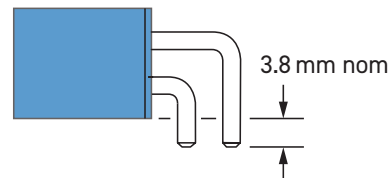
Technical Specification

| | |
|----------------------|--|
| Connector Type: | 20-Pin Scorpion |
| Gender | Female |
| Keying Position | Position 1 (20 A products) |
| Securing Method | 4-40 UNC screwlocks, male |
| PCB Mounting | Right angle PCB mount, solder |
| Connector Ratings: | |
| Maximum Current | 20 A |
| Maximum Voltage | 600 VAC |
| 20-Pin Scorpion: | |
| Contact Material | Gold flash over nickel on copper alloy |
| Contact Resistance | 1 mOhm |
| PCB Legs: | |
| Effective Leg Length | 3.8 mm nom (See diagram) |

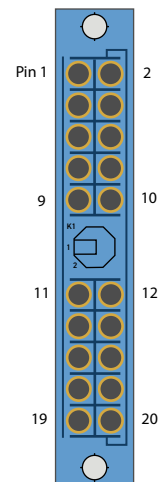


Mating Face of Connector this Side of Footprint

PCB Footprint of 20-Pin Right Angle Female Scorpion Connector (Connector Side - Not to Scale)



Effective Leg Length



Female Mating Face (Key in posn 1)

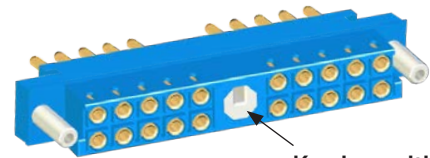
Product Order Codes

20-Pin Scorpion Connector for 20 A Cables, Right Angle PCB Mount, Female C020AFX-2PR-2A

- Straight PCB Mount
- Ideal for User Created Termination Solutions

This accessory allows a user to create their own PCB based termination solution mounted on the end of a cable. Suitable cables for this product are contained elsewhere in this data sheet. Interfacing PCBs should be designed with suitable clearances for the voltage the application requires.

Note: This product is not suitable for directly mounting onto the front panel of a Pickering switching product.



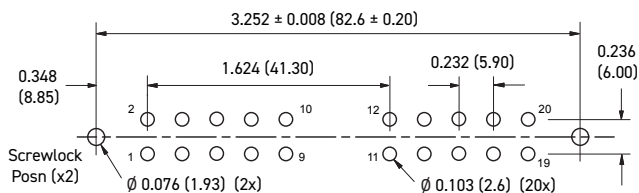
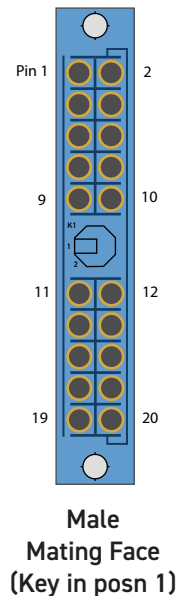
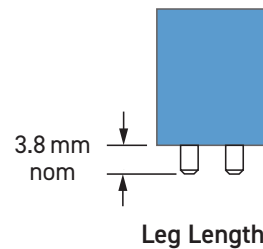
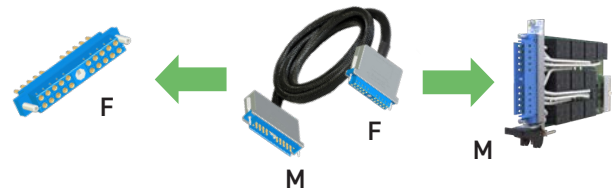
Key in position 1 (20 A)

20 A Scorpion PCB Connector, Straight - Female

Technical Specification

| | |
|--------------------|--|
| Connector Type: | 20-Pin Scorpion |
| Gender | Female |
| Keying Position | Position 1 (20 A products) |
| Securing Method | 4-40 UNC screwlocks, male |
| PCB Mounting | Straight PCB mount, solder |
| Connector Ratings: | |
| Maximum Current | 20 A |
| Maximum Voltage | 600 VAC |
| 20-Pin Scorpion: | |
| Contact Material | Gold flash over nickel on copper alloy |
| Contact Resistance | 1 mOhm |
| PCB Legs: | |
| Leg Length | 3.8 mm nom (See diagram) |

Product Compatibility



PCB Footprint of 20-Pin Straight Female Scorpion Connector (Connector Side - Not to Scale)

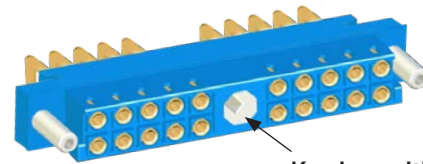
Product Order Codes

20-Pin Scorpion Connector for 20 A Cables, Straight PCB Mount, Female [C020AFX-2PS-2A](#)

- Right Angle PCB Mount
- Ideal for User Created Termination Solutions

This accessory allows a user to create their own PCB based termination solution mounted on the end of a cable. Suitable cables for this product are contained elsewhere in this data sheet. Interfacing PCBs should be designed with suitable clearances for the voltage the application requires.

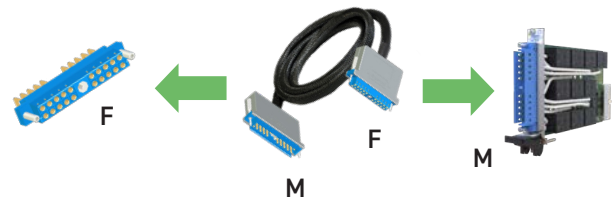
Note: This product is not suitable for directly mounting onto the front panel of a Pickering switching product.



Key in position 2 (30 A)

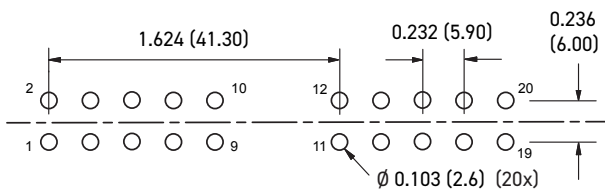
30 A Scorpion PCB Connector, Right Angle - Female

Product Compatibility



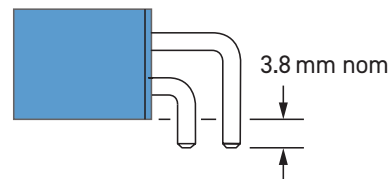
Technical Specification

| | |
|---------------------------|--|
| Connector Type: | 20-Pin Scorpion |
| Gender | Female |
| Keying Position | Position 2 (30 A products) |
| Securing Method | 4-40 UNC screwlocks, male |
| PCB Mounting | Right angle PCB mount, solder |
| Connector Ratings: | |
| Maximum Current | 30 A |
| Maximum Voltage | 600 VAC |
| 20-Pin Scorpion: | |
| Contact Material | Gold flash over nickel on copper alloy |
| Contact Resistance | 1 mOhm |
| PCB Legs: | |
| Effective Leg Length | 3.8 mm nom (See diagram) |

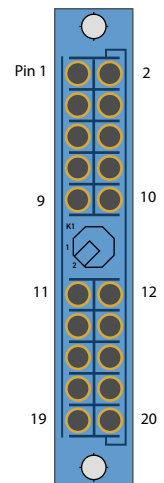


Mating Face of Connector this Side of Footprint

PCB Footprint of 20-Pin Right Angle Female Scorpion Connector (Connector Side - Not to Scale)



Effective Leg Length



Female Mating Face (Key in posn 2)

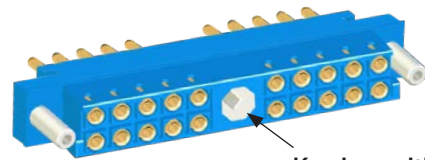
Product Order Codes

20-Pin Scorpion Connector for 30 A Cables, Right Angle PCB Mount, Female [C020AFX-2PR-3A](#)

- Straight PCB Mount
- Ideal for User Created Termination Solutions

This accessory allows a user to create their own PCB based termination solution mounted on the end of a cable. Suitable cables for this product are contained elsewhere in this data sheet. Interfacing PCBs should be designed with suitable clearances for the voltage the application requires.

Note: This product is not suitable for directly mounting onto the front panel of a Pickering switching product.



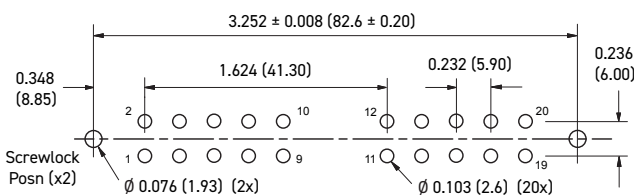
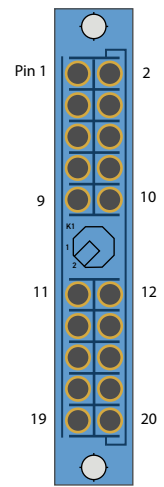
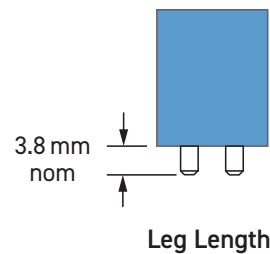
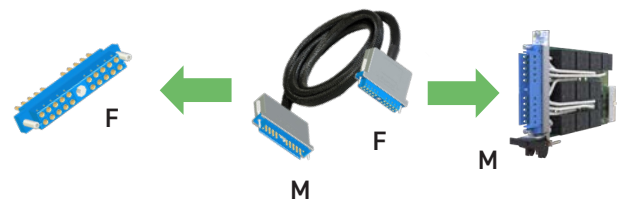
Key in position 2 (30 A)

30 A Scorpion PCB Connector, Right Angle - Female

Technical Specification

| | |
|--------------------|--|
| Connector Type: | 20-Pin Scorpion |
| Gender | Female |
| Keying Position | Position 2 (30 A products) |
| Securing Method | 4-40 UNC screwlocks, male |
| PCB Mounting | Straight PCB mount, solder |
| Connector Ratings: | |
| Maximum Current | 30 A |
| Maximum Voltage | 600 VAC |
| 20-Pin Scorpion: | Position 2 |
| Contact Material | Gold flash over nickel on copper alloy |
| Contact Resistance | 1 mOhm |
| PCB Legs: | |
| Leg Length | 3.8 mm nom (See diagram) |

Product Compatibility



PCB Footprint of 20-Pin Straight Female Scorpion Connector (Connector Side - Not to Scale)

Product Order Codes

20-Pin Scorpion Connector for 30 A Cables, Straight PCB Mount, Female [C020AFX-2PS-3A](#)

Custom Termination

Pickering Interfaces are able to manufacture custom built cable assemblies and backshells that mate with all the connectors we use in our extensive product range and to provide connection solutions for third party products.

We are able to model and manufacture cable assemblies and other termination arrangements to user notes and drawings, and to deal with simple and complex assemblies, and both small and high volume orders.

All products are designed to ensure easy and problem free connection.

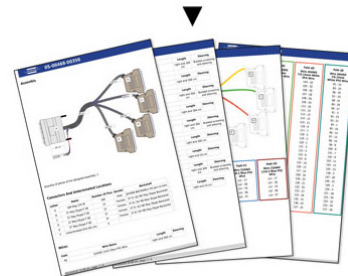
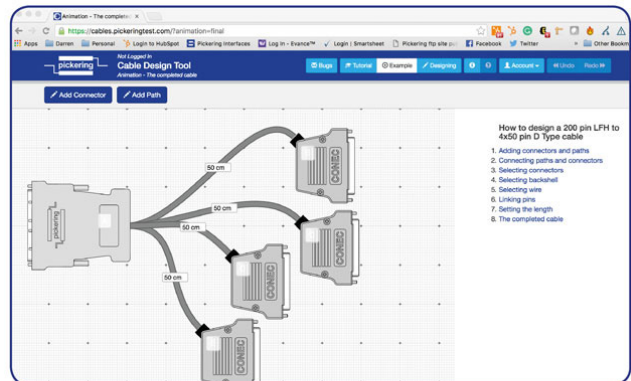
We offer a fast turn round of custom items to keep your ordering and integration time scales to a minimum.



Pickering's Cable Design Tool

Our Cable Design Tool is an online tool that allows you to define a cable assembly to exactly meet your requirements.

- Graphical design of customized cable assemblies
- Built-in library of standard cable sets can be used as the basis for customization, or cables can be defined from scratch
- The ability to store cable assemblies in the Cloud and develop them over time
- Each cable design has a PDF documentation file detailing all the specifications
- Allows detailed design including; connector types, wire type, pin definitions, pin & cable labelling, cable bundling, length selection, sleeving, comments, etc.
- Add your own connectors and wires
- Fully supported on major tablet operating systems



Because the Cable Design Tool is a web-based tool, we will continually update it to better accommodate your requirements and features. Your data is not trapped; complete details of the design are always available to the user at any time via the documentation or spreadsheet file. Once a cable is designed, you can submit it to us for quotation.

For more information visit: pickeringtest.com/cdt