## Standard Voltage 50-Pin D-type Connector Accessories

- Standard Voltage to 250V AC/400V DC, 5A
- Mating Connectors
- Connector Hoods
- Connector Blocks
- Cable Assemblies
- Guaranteed Compatibility
- 50-Pin High Voltage Solutions are also Available See Data Sheet 90-005HVD

上海 021-6728 2707; 136 7167 1424 | 北京 010-5781 5040; 187 1014 9603 西安 029-8187 3816; 152 9185 3139 | 成都 028-6138 2617; 136 8841 6951 沈阳 024-8376 9335; 157 1053 7541 | 深圳 0755-22677441 | 武汉 027-8193 9100

The Standard Voltage 50-Pin D-Type connector is used on switching products to provide a medium density user connector solution.

Connector to Connector cable assemblies provide a simple way of connecting the product to the user's remote mating connection. Connectors to unterminated solutions allow the user to connect directly to the product connector and wire directly into a remote UUT. Cable assemblies are offered in various lengths to meet most user requirements.

For unterminated versions of cables we offer options based on the use of boot lace ferrules, tinned copper ends or simple cut ends to suit user termination requirements.

For users wishing to develop their own cabling solutions, we offer mating connectors and connector hoods which allow users to create either their own cable based solutions, or a PCB header solution. Connector Blocks directly terminate the module connector and convert the connection to arrays of screw terminal blocks, or users can select to use a remote breakout to terminate the cables at the end of a cable assembly.

Pickering Interfaces can manufacture custom connector accessories to suit any application. If you do not see what you need then contact your Pickering Interfaces sales office with information on your requirements and let us solve your connection problems.



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## **Contents - Additional Accessories**

Although these items do not directly mate with Pickering Interfaces products customers may find them useful in the development of their own connection solutions.

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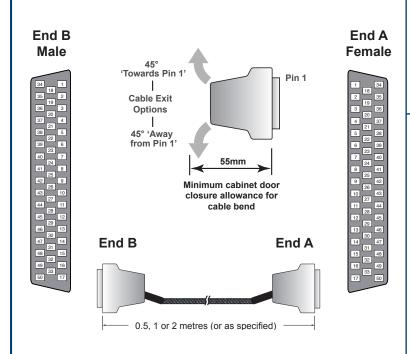
Standard Voltage - Male Connector Blocks/Connectors				
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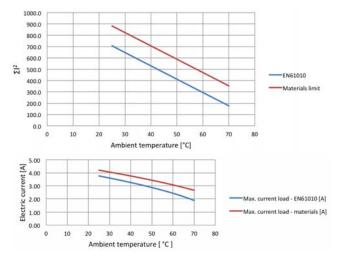


# Standard Voltage 50-Pin D-Type Cable Assy - Male to Female

- High Specification Cable
- Highly Flexible Cable with Braided Sleeving
- 45 Degree Cable Exit
- Strain Relief
- Fully Screened Cable Construction

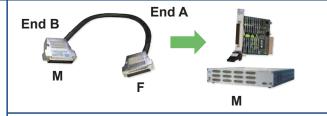


#### Characteristic Plots for 40-970-050-1m



The top graph shows the permitted  $\Sigma$ l² versus ambient temperature in accordance with EN61010 for user exposure to surface temperature and a higher limit imposed by the materials used where the cable is not directly user accessible.

The bottom graph shows the allowed current versus temperature assuming ALL wires carry the same current. Higher currents to the cable rating are permitted on individual wires provided the  $\Sigma$ I<sup>2</sup> is complied with.





#### **Technical Specification**

Gend	ector Type (End A): er ring Method	50-Pin D-Subminiature Female 4-40 UNC screwlocks, male
Gend	ector Type (End B): er ing Method	50-Pin D-Subminiature Male 4-40 UNC screwlocks, male
Maxir Maxir Insula	Assembly Rating: num Current num Voltage Ition Resistance ectors:	5A 250VAC/400VDC 1000MOhm
Conta Cable Overa	act Material act Resistance Exit all Size (Approx) Type:	Gold plated copper alloy <20mOhm 45° (See Order Codes) H68 x W18.5 x D55mm Individual wires, screened & sleeved
Outer	uctor: Material Strands Resistance Insulation Sleeve	Copper 19/0.18 (0.41mm², 21AWG) 0.041Ω/m PFA Polyester
Additi Cable Minim	ened Construction onal Braided Sleeve O/D num Bend Radius Closure Allowance	Yes Yes 12mm 25mm 55mm (see diagram)
Notes: Other cable lengths can be supplied.		

#### **Product Order Codes**

50-Pin D-Type Cable Assy, 5A, Male to Female,

Cable Lait 43	(Away iroini i iii i),
0.5m Long	40-970-050-0.5m-MF
1.0m Long	40-970-050-1m-MF
2.0m Long	40-970-050-2m-MF

Cable Exit 45° (Towards Pin 1), 0.5m Long A0

Cable Evit 45° (Away from Pin 1)

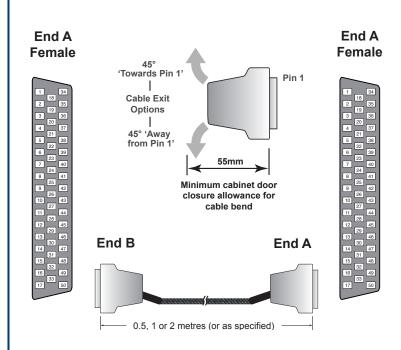
 0.5m Long
 A050DM5-050DF5-0A050

 1.0m Long
 A050DM5-050DF5-0A100

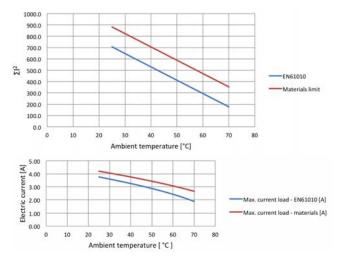
 2.0m Long
 A050DM5-050DF5-0A200

# Standard Voltage 50-Pin D-Type Cable Assy - Female to Female

- **High Specification Cable**
- **Highly Flexible Cable with Braided Sleeving**
- **45 Degree Cable Exit**
- **Strain Relief**
- **Fully Screened Cable Construction**

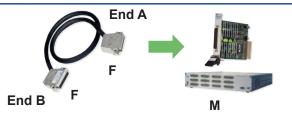


#### Characteristic Plots for 40-970-050-1m



The top graph shows the permitted  $\Sigma I^2$  versus ambient temperature in accordance with EN61010 for user exposure to surface temperature and a higher limit imposed by the materials used where the cable is not directly user accessible.

The bottom graph shows the allowed current versus temperature assuming ALL wires carry the same current. Higher currents to the cable rating are permitted on individual wires provided the ΣI<sup>2</sup> is complied with.





#### **Technical Specification**

Connector Type (End A):       50-Pin D-Subminiature         Gender       4-40 UNC screwlocks, male         Connector Type (End B):       50-Pin D-Subminiature         Gender       50-Pin D-Subminiature         Securing Method       50-Pin D-Subminiature         Female       4-40 UNC screwlocks, male         Cable Assembly Rating:         Maximum Current       5A         Maximum Voltage       1000MOhm         Insulation Resistance       Gold plated copper alloy         Contact Material       Gold plated copper alloy         Contact Resistance       45° (See Order Codes)         Cable Exit       45° (See Order Codes)         Overall Size (Approx)       H68 x W18.5 x D55mm         Individual wires, screened       & sleeved         Copper       19/0.18 (0.41mm², 21AWG)         0.041Ω/m       PFA         Polyester       Yes		
Connector Type (End B):       50-Pin D-Subminiature         Gender       Female         Securing Method       4-40 UNC screwlocks, male         Cable Assembly Rating:         Maximum Current       5A         Maximum Voltage       1000MOhm         Insulation Resistance       Gold plated copper alloy         Contact Material       Gold plated copper alloy         Contact Resistance       45° (See Order Codes)         Cable Exit       45° (See Order Codes)         Overall Size (Approx)       H68 x W18.5 x D55mm         Individual wires, screened       & sleeved         Conductor: Material       Copper         Strands       19/0.18 (0.41mm², 21AWG)         0.041Ω/m       PFA         Polyester	Gender	Female
Maximum Current       5A         Maximum Voltage       250VAC/400VDC         Insulation Resistance       1000MOhm         Contact Material       Gold plated copper alloy         Contact Resistance       <20mOhm         Cable Exit       45° (See Order Codes)         Overall Size (Approx)       H68 x W18.5 x D55mm         Individual wires, screened       & sleeved         Conductor: Material       Copper         Strands       19/0.18 (0.41mm², 21AWG)         Resistance       0.041Ω/m         Insulation       PFA         Polyester	Gender	Female
Additional Braided Sleeve Cable O/D Minimum Bend Radius Door Closure Allowance  Yes 12mm 25mm 55mm (see diagram)	Maximum Current Maximum Voltage Insulation Resistance Connectors: Contact Material Contact Resistance Cable Exit Overall Size (Approx) Cable Type:  Conductor: Material Strands Resistance Insulation Outer Sleeve Screened Construction Additional Braided Sleeve Cable O/D Minimum Bend Radius	250VAC/400VDC 1000MOhm  Gold plated copper alloy <20mOhm 45° (See Order Codes) H68 x W18.5 x D55mm Individual wires, screened & sleeved Copper 19/0.18 (0.41mm², 21AWG) 0.041Ω/m PFA Polyester Yes Yes 12mm 25mm

#### **Product Order Codes**

50-Pin D-Type Cable Assy, 5A, Female to Female,

Other cable lengths can be supplied.

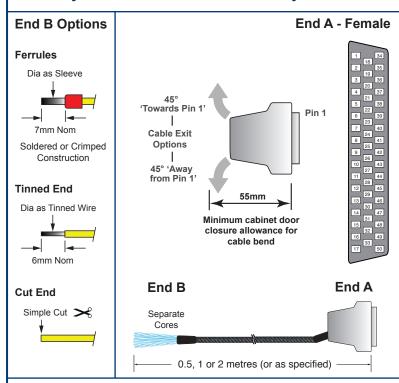
Cable Exit 45° (Away from Din 1)

Cable Exit 45	(Away II OIII FIII 1),
0.5m Long	40-970-050-0.5m-FF
1.0m Long	40-970-050-1m-FF
2.0m Long	40-970-050-2m-FF

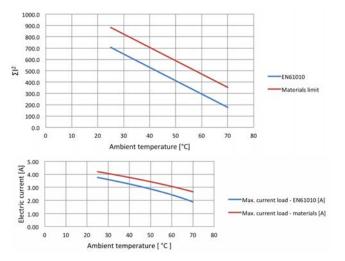
Cable Exit 45° (Towards Pin	1 1),
0.5m Long	A050DF5-050DF5-0A050
1.0m Long	A050DF5-050DF5-0A100
2.0m Long	A050DF5-050DF5-0A200

# Standard Voltage 50-Pin D-Type Cable Assy - Female to Unterminated

- High Specification Cable
- Highly Flexible Cable
- Fully Screened Cable Construction with Braided Sleeve and Strain Relief
- 45 Degree Cable Exit
- Fully Coded Markers to Ensure Easy Connection

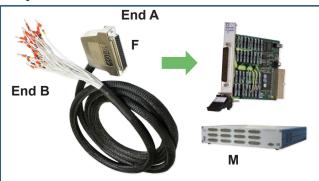


#### Characteristic Plots for 40-972-050-1m



The top graph shows the permitted  $\Sigma$ I² versus ambient temperature in accordance with EN61010 for user exposure to surface temperature and a higher limit imposed by the materials used where the cable is not directly user accessible.

The bottom graph shows the allowed current versus temperature assuming ALL wires carry the same current. Higher currents to the cable rating are permitted on individual wires provided the  $\Sigma$ I<sup>2</sup> is complied with.



#### **Technical Specification**

Connector Type (End A): Gender Securing Method50-Pin D-Subminiature Female 4-40 UNC screwlocks, maleUnterminated End (End B): Free Wire Length Individual Wire Labelling Wire End Options130mm nominal To connector pins Ferrules, Tinned, Cut EndCable Assembly Rating: Maximum Current Maximum Voltage Insulation Resistance Connector: Contact Material Contact Resistance Cable Exit Overall Size (Approx) Cable Type:5A 250VAC/400VDC 1000MOhmConductor Material Strands Resistance InsulationGold plated copper alloy <20mOhm 45° (See Order Codes) H68 x W18.5 x D55mm Individual wires, screened & sleeved Copper 19/0.18 (0.41mm², 21AWG) 0.041Ω/m (max) PFA Polyester Yes Cable O/D Minimum Bend Radius Door Closure Allowance		
Unterminated End (End B):         Free Wire Length         Individual Wire Labelling         Wire End Options         Cable Assembly Rating:         Maximum Current       5A         Maximum Voltage       250VAC/400VDC         Insulation Resistance       1000MOhm         Contact Material       Gold plated copper alloy         Contact Resistance       20mOhm         Cable Exit       45° (See Order Codes)         Overall Size (Approx)       H68 x W18.5 x D55mm         Individual wires, screened       & sleeved         Conductor: Material       Copper         Strands       19/0.18 (0.41mm², 21AWG)         Resistance       0.041Ω/m (max)         Insulation       PFA         Polyester       Yes         Screened Construction       Yes         Additional Braided Sleeve       Yes         Cable O/D       12mm         Minimum Bend Radius       25mm	Gender	
Free Wire Length Individual Wire Labelling Wire End Options  Cable Assembly Rating: Maximum Current Maximum Voltage Insulation Resistance Contact Material Contact Resistance Cable Exit Overall Size (Approx) Cable Type:  Conductor: Material Strands Resistance Insulation Outer Sleeve Screened Conbulation Additional Braided Sleeve Cable O/D Minimum Bend Radius  130mm nominal To connector pins Ferrules, Tinned, Cut End  5A 250VAC/400VDC 1000MOhm  6A 45° (See Order Codes) 168 x W18.5 x D55mm  1ndividual wires, screened 8 sleeved Copper 19/0.18 (0.41mm², 21AWG) 0.041Ω/m (max) PFA Polyester Yes 12mm 12mm 12mm 12mm 12mm 12mm 12mm 12m	Securing Method	4-40 UNC screwlocks, male
Individual Wire Labelling Wire End Options	Unterminated End (End B):	
Wire End Options       Ferrules, Tinned, Cut End         Cable Assembly Rating:         Maximum Current       5A         Maximum Voltage       250VAC/400VDC         Insulation Resistance       1000MOhm         Contact Material       Gold plated copper alloy         Contact Resistance       <20mOhm	Free Wire Length	130mm nominal
Cable Assembly Rating:         Maximum Current       5A         Maximum Voltage       250VAC/400VDC         Insulation Resistance       1000MOhm         Contact Material       Gold plated copper alloy         Contact Resistance       <20mOhm	Individual Wire Labelling	To connector pins
Maximum Current       5A         Maximum Voltage       1000MOhm         Insulation Resistance       60ld plated copper alloy         Contact Material       45° (See Order Codes)         Contact Resistance       45° (See Order Codes)         Cable Exit       45° (See Order Codes)         Overall Size (Approx)       H68 x W18.5 x D55mm         Individual wires, screened       8 sleeved         Conductor: Material       Copper         Strands       19/0.18 (0.41mm², 21AWG)         Resistance       0.041Ω/m (max)         Insulation       PFA         Polyester       Yes         Screened Construction       Yes         Additional Braided Sleeve       Yes         Cable O/D       12mm         Minimum Bend Radius       25mm	Wire End Options	Ferrules, Tinned, Cut End
Maximum Voltage       250VAC/400VDC         Insulation Resistance       1000MOhm         Connector:       Gold plated copper alloy         Contact Resistance       <20mOhm         Cable Exit       45° (See Order Codes)         Overall Size (Approx)       H68 x W18.5 x D55mm         Cable Type:       Individual wires, screened         Conductor: Material       Copper         Strands       19/0.18 (0.41mm², 21AWG)         Resistance       0.041Ω/m (max)         Insulation       PFA         Polyester       Yes         Screened Construction       Yes         Additional Braided Sleeve       Yes         Cable O/D       12mm         Minimum Bend Radius       25mm	Cable Assembly Rating:	
Insulation Resistance  Connector:  Contact Material Contact Resistance Cable Exit Overall Size (Approx) Cable Type:  Conductor: Material Strands Resistance Insulation Outer Sleeve Screened Construction Additional Braided Sleeve Cable O/D Minimum Bend Radius  Gold plated copper alloy <20mOhm 45° (See Order Codes) H68 x W18.5 x D55mm Individual wires, screened & sleeved Copper 19/0.18 (0.41mm², 21AWG) 0.041Ω/m (max) PFA Polyester Yes Yes 12mm 25mm	Maximum Current	5A
Connector:         Contact Material       Gold plated copper alloy         Contact Resistance       <20mOhm	Maximum Voltage	250VAC/400VDC
Contact Material Contact Resistance Cable Exit Overall Size (Approx) Cable Type:  Conductor: Material Strands Resistance Insulation Outer Sleeve Screened Construction Additional Braided Sleeve Cable O/D Minimum Bend Radius  Gold plated copper alloy <20mOhm 45° (See Order Codes) H68 x W18.5 x D55mm Individual wires, screened & sleeved Copper 19/0.18 (0.41mm², 21AWG) 0.041Ω/m (max) PFA Polyester Yes Yes 12mm 25mm	Insulation Resistance	1000MOhm
Contact Resistance Cable Exit Overall Size (Approx) Cable Type:  Conductor: Material Strands Resistance Insulation Outer Sleeve Screened Construction Additional Braided Sleeve Cable O/D Minimum Bend Radius		
Cable Exit Overall Size (Approx)  Cable Type:  Conductor: Material Strands Resistance Insulation Outer Sleeve Screened Construction Additional Braided Sleeve Cable O/D Minimum Bend Radius  45° (See Order Codes) H68 x W18.5 x D55mm Individual wires, screened & sleeved Copper 19/0.18 (0.41mm², 21AWG) 0.041Ω/m (max) PFA Polyester Yes Yes 12mm 25mm		
Overall Size (Approx)  Cable Type:  Conductor: Material Strands Resistance Insulation Outer Sleeve Screened Construction Additional Braided Sleeve Cable O/D Minimum Bend Radius  H68 x W18.5 x D55mm Individual wires, screened & sleeved Copper 19/0.18 (0.41mm², 21AWG) 0.041Ω/m (max) PFA Polyester Yes Yes 12mm 25mm		
Cable Type:       Individual wires, screened & sleeved         Conductor: Material Strands Resistance Insulation       19/0.18 (0.41mm², 21AWG)         Outer Sleeve Screened Construction Additional Braided Sleeve Cable O/D Minimum Bend Radius       PFA Polyester Yes Yes         12mm       12mm         25mm       25mm		,
Conductor: Material Strands Resistance Insulation Outer Sleeve Screened Construction Additional Braided Sleeve Cable O/D Minimum Bend Radius  & sleeved Copper 19/0.18 (0.41mm², 21AWG) 0.041Ω/m (max) PFA Polyester Yes Yes 12mm 25mm		
Conductor: Material Strands Resistance Insulation Outer Sleeve Screened Construction Additional Braided Sleeve Cable O/D Minimum Bend Radius  Copper 19/0.18 (0.41mm², 21AWG) 0.041Ω/m (max) PFA Polyester Yes Yes 12mm 25mm	Cable Type:	,
Strands Resistance Insulation Outer Sleeve Screened Construction Additional Braided Sleeve Cable O/D Minimum Bend Radius  19/0.18 (0.41mm², 21AWG) 0.041Ω/m (max) PFA Polyester Yes Yes 12mm 25mm	Conductor Material	0.000.00
Resistance Insulation Outer Sleeve Screened Construction Additional Braided Sleeve Cable O/D Minimum Bend Radius  0.041Ω/m (max) PFA Polyester Yes Yes 12mm 25mm		
Insulation PFA Outer Sleeve Polyester Screened Construction Yes Additional Braided Sleeve Yes Cable O/D 12mm Minimum Bend Radius 25mm		
Outer Sleeve Polyester Screened Construction Yes Additional Braided Sleeve Cable O/D 12mm Minimum Bend Radius 25mm		` '
Screened Construction Additional Braided Sleeve Cable O/D Minimum Bend Radius Yes Yes 12mm 25mm		' ' ' '
Additional Braided Sleeve Yes Cable O/D 12mm Minimum Bend Radius 25mm	0 0.00.0	
Minimum Bend Radius 25mm	Additional Braided Sleeve	Yes
	Cable O/D	12mm
Door Closure Allowance 55mm (see diagram)	Minimum Bend Radius	25mm
	Door Closure Allowance	55mm (see diagram)

#### Notes:

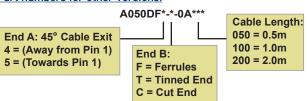
- When using this product please ensure appropriate electrical safety precautions are observed.
- Other cable lengths can be supplied.

#### Product Order Codes

50-Pin D-Type Cable Assy, 5A, Cable Exit Away from Pln 1, Boot Lace Ferrules,

Female to Unterminated, 0.5m Long 40-972-050-0.5m-FU Female to Unterminated, 1.0m Long 40-972-050-1m-FU Female to Unterminated, 2.0m Long 40-972-050-2m-fU

#### Part numbers for other versions:



# **Standard Voltage 50-Pin D-Type Connector Block - Female**

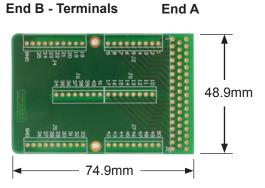
- Connector and PCB Only or Connector, PCB and Backshell
- Male Screwlocks
- Cable Clamp in Backshell
- Easy to Use Rising Cage Screw Terminals

Connector blocks provide a convenient method of termination without the use of custom cabling. However, a higher resistance path, lower capacity ratings and lower voltage ratings are typical.

The screw terminals use a rising cage clamp mechanism to minimize risk of copper strand breakage. PTFE cables are recommended for use with this connector block to maximise copper cross-sectional area and insulation properties. The breakdown voltage of the connector block is controlled by clearances to the metal shell. The metal shell includes an internal insulation barrier under the carrier board.

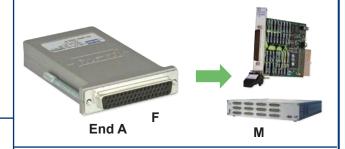
This connector block uses male screwlocks and will not mate to Pickering cables. Connector blocks supplied without a backshell do not include cable strain relief.

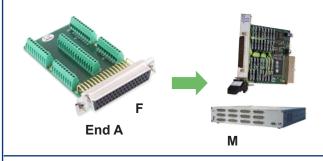


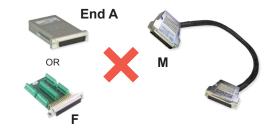












#### **Technical Specification**

Connector Type (End A): Gender Securing Method:	50-Pin D-Subminiature Female
Product with Backshell Product without Backshell	4-40 UNC screwlocks, male 4-40 UNC screwlocks, male
Wire Connection (End B):	
Gender	Female
Connection Method	Rising cage screw terminals
Connector Block Ratings:	
Maximum Current	5A
Maximum Voltage	200VDC
Cable Exit	Rear - 10.3 x 20mm
Overall Size (Approx)	H68 x W18 x D100mm
50-Pin D-Sub:	
Contact Material	Gold plated copper alloy
Contact Resistance	<20mOhm
Screw Terminals:	
Maximum Wire Size	20AWG
Recommended Insulation	PTFE
Additional Cable Clamp	Yes (in backshell)

#### **Product Order Codes**

50-Pin D-Type Shielded Connector Block, 5A,

Screw Terminal, With Backshell, Female Screw Terminal, Without Backshell, Female 40-965-050-F 92-965-050-F

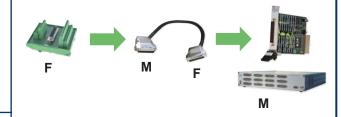
# Standard Voltage 50-Pin D-Type Breakout - Female

- For Connection at Cable End
- Simple to Use Rising Cage Screw Clamp Termination
- DIN Rail Mounted

Connector blocks provide a convenient method of termination without the use of custom cabling. However, a higher resistance path, lower capacity ratings and lower voltage ratings are typical.

This termination option is capable of accepting heavy duty connection wires and uses rising clamp screw terminals to minimize the danger of copper strand damage. Users should care take to protect the termination and provide a suitable method of restraining the cables.

When using this product please ensure appropriate electrical safety precautions are observed.





# End B Terminals End A 40-967-050-F Terminals 50 Hay D Power Breakout Fesale. 336r0 02/03 DD 40-967-050F Terminals Terminals

End A Female

#### Technical Specification

•	
Connector Type (End A):	50-Pin D-Subminiature
Gender	Female
Securing Method	4-40 UNC screwlocks, female
Wire Connection (End B Gender Connection Method	Female Rising cage screw terminals
Breakout Ratings:	5A
Maximum Current	200VDC
Maximum Voltage	Suitable for securing to
Securing Method	DIN rails.
Overall Size (Approx) 50-Pin D-Sub: Contact Material Contact Resistance Screw Terminals:	H110 x W110 x D56mm  Gold plated copper alloy <20mOhm
Maximum Wire Size	12AWG
Additional Cable Clamp	No

#### **Product Order Codes**

50-Pin D-Type Breakout with DIN Rail Mount, 5A, Screw Terminal, Female 40-967-050-F

C

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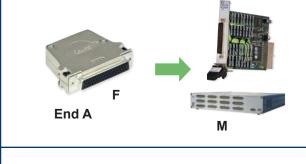
# **Standard Voltage 50-Pin D-Type Connector - Female**

- Connector only or Connector and Backshell
- Cable Clamp in Backshell
- Soldered Cable Termination

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

Connector and shell are supplied separately to allow the user to determine the direction of the cable exit.

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.

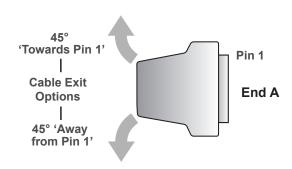


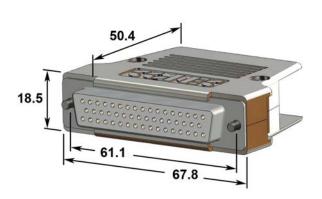


# End A Female



# End B Internal Solder Connection





#### **Technical Specification**

Gender Securing Method: Product with Backshell Product without Backshell	Female  4-40 UNC screwlocks, male 4-40 UNC screwlocks, male
Wire Connection (End B): Gender Connection Method	Female Solder bucket
Connector Ratings: Maximum Current Maximum Voltage Cable Exit: Cable Exit Size Overall Size (Approx) 50-Pin D-Sub: Contact Material Contact Resistance Wire Connection:	5A 250VAC 45° 15mm dia H68 x W18.5 x D55mm  Gold plated copper alloy 20mOhm
Maximum Wire Size Recommended Insulation Additional Cable Clamp	20AWG PTFE Yes (in backshell)

Connector Type (End A): 50-Pin D-Subminiature

#### Product Order Codes

50-Pin D-Type Connector, 5A, Solder Bucket,

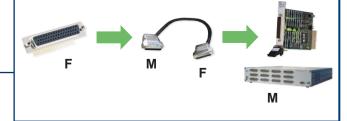
With Backshell, Female 40-960-050-F Without Backshell, Female 92-960-050-F

# Standard Voltage 50-Pin D-Type Connector - Female

- 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.

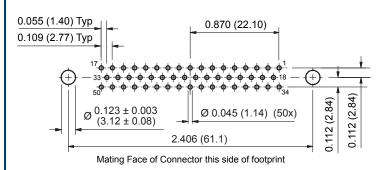
Note: This product is not suitable for directly mounting onto the front panel of a Pickering switching product.





#### End A Female

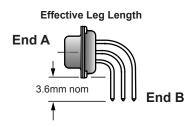




PCB Footprint of 50-Pin Right Angle Female Connector (Connector Side - Not to Scale)

#### **Technical Specification**

Connector Type (End A): Gender Securing Method	50-Pin D-Subminiature Female 4-40 UNC screwlocks, female
PCB Connection (End B): Gender Connection Method Mounting	Male Solder Right angle PCB mount
Connector Ratings: Maximum Current Maximum Voltage 50-Pin D-Sub: Contact Material Contact Resistance PCB Legs: Effective Leg Length	5A each pin 250VAC Gold plated copper alloy <20mOhm 3.6mm nom (See diagram)



#### **Product Order Codes**

50-Pin D-Type Connector, 5A, Right Angle PCB Mount Female 40-963-050-RF

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# Standard Voltage 50-Pin D-Type Connector - Female

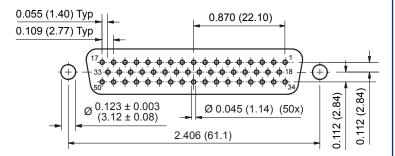
- Straight PCB Mount
- Ideal for User Created Termination Solutions

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.

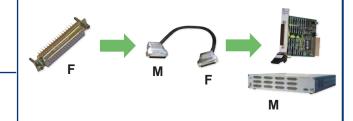
Note: This product is not suitable for directly mounting onto the front panel of a Pickering switching product.







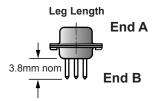
PCB Footprint of 50-Pin Straight Female Connector (Connector Side - Not to Scale)





#### **Technical Specification**

Connector Type (End A): Gender Securing Method	50-Pin D-Subminiature Female 4-40 UNC screwlocks, female
PCB Connection (End B):	
Gender	Male
Connection Method	Solder
Mounting	Straight PCB mount
Connector Ratings:	
Maximum Current	5A each pin
Maximum Voltage	250VAC
50-Pin D-Sub:	
Contact Material	Gold plated copper alloy
Contact Resistance	<20mOhm
PCB Legs:	
Effective Leg Length	3.8mm nom (See diagram)

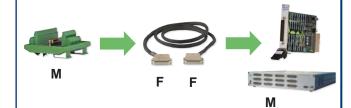


#### **Product Order Codes**

50-Pin D-Type Connector, 5A, Straight PCB Mount Female 40-963-050-SF

# Standard Voltage 50-Pin D-Type Breakout - Male

- For Connection at Cable End
- Simple to Use Rising Cage Screw Clamp Termination
- DIN Rail Mounted



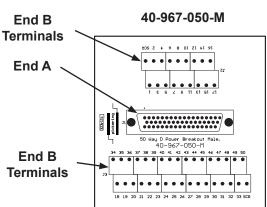
Connector blocks provide a convenient method of termination without the use of custom cabling. However, a higher resistance path, lower capacity ratings and lower voltage ratings are typical.

This termination option is capable of accepting heavy duty connection wires and uses rising clamp screw terminals to minimize the danger of copper strand damage. Users should care take to protect the termination and provide a suitable method of restraining the cables.

When using this product please ensure appropriate electrical safety precautions are observed.



# End A Male



# 34 1 1 3 3 3 3 2 0 4 4 3 3 1 5 4 3 3 4 4 2 5 9 4 4 2 7 11 4 5 2 12 4 6 2 3 1 3 4 4 3 3 1 5 5 3 3 1 5 5 5 3 3 1 7

#### Technical Specification

•	
Connector Type (End A): Gender Securing Method	50-Pin D-Subminiature Male 4-40 UNC screwlocks, female
Securing Method	4-40 ONC SCIEWIOCKS, IEITIAIE
Wire Connection (End B):	
Gender	Female
Connection Method	Rising cage screw terminals
Breakout Ratings:	
Maximum Current	5A
Maximum Voltage	200VDC
Securing Method	Suitable for securing to
3	DIN rails.
Overall Size (Approx)	H110 x W110 x D56mm
50-Pin D-Sub:	
Contact Material	Gold plated copper alloy
Contact Resistance	<20mOhm
Screw Terminals:	
Maximum Wire Size	12AWG
Additional Cable Clamp	No

#### **Product Order Codes**

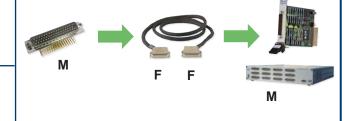
50-Pin D-Type Breakout with DIN Rail Mount, 5A, Screw Terminal, Male 40-967-050-M

# Standard Voltage 50-Pin D-Type Connector - Male

- 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.

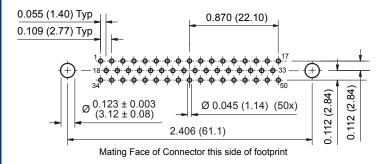
Note: This product is not suitable for directly mounting onto the front panel of a Pickering switching product.





#### End A Male

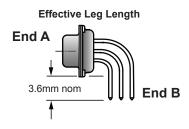




PCB Footprint of 50-Pin Right Angle Male Connector (Connector Side - Not to Scale)

#### **Technical Specification**

Connector Type (End A): Gender Securing Method	50-Pin D-Subminiature Male 4-40 UNC screwlocks, female
PCB Connection (End B): Gender Connection Method Mounting	Male Solder Right angle PCB mount
Connector Ratings: Maximum Current Maximum Voltage 50-Pin D-Sub: Contact Material Contact Resistance PCB Legs:	5A each pin 250VAC Gold plated copper alloy <20mOhm
Effective Leg Length	3.6mm nom (See diagram)



#### **Product Order Codes**

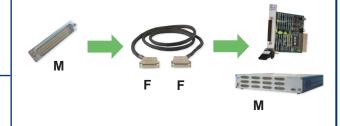
50-Pin D-Type Connector, 5A, Right Angle PCB Mount Male 40-963-050-RM

# Standard Voltage 50-Pin D-Type Connector - Male

- 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.

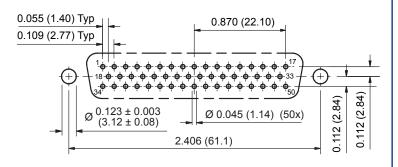
Note: This product is not suitable for directly mounting onto the front panel of a Pickering switching product.





#### End A Male

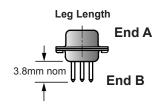




PCB Footprint of 50-Pin Straight Male Connector (Connector Side - Not to Scale)

#### **Technical Specification**

Connector Type (End A): Gender Securing Method	50-Pin D-Subminiature Male 4-40 UNC screwlocks, female
PCB Connection (End B): Gender Connection Method Mounting	Male Solder Straight PCB mount
Connector Ratings: Maximum Current Maximum Voltage 50-Pin D-Sub:	5A each pin 250VAC
Contact Material Contact Resistance PCB Legs:	Gold plated copper alloy <20mOhm
Effective Leg Length	3.8mm nom (See diagram)

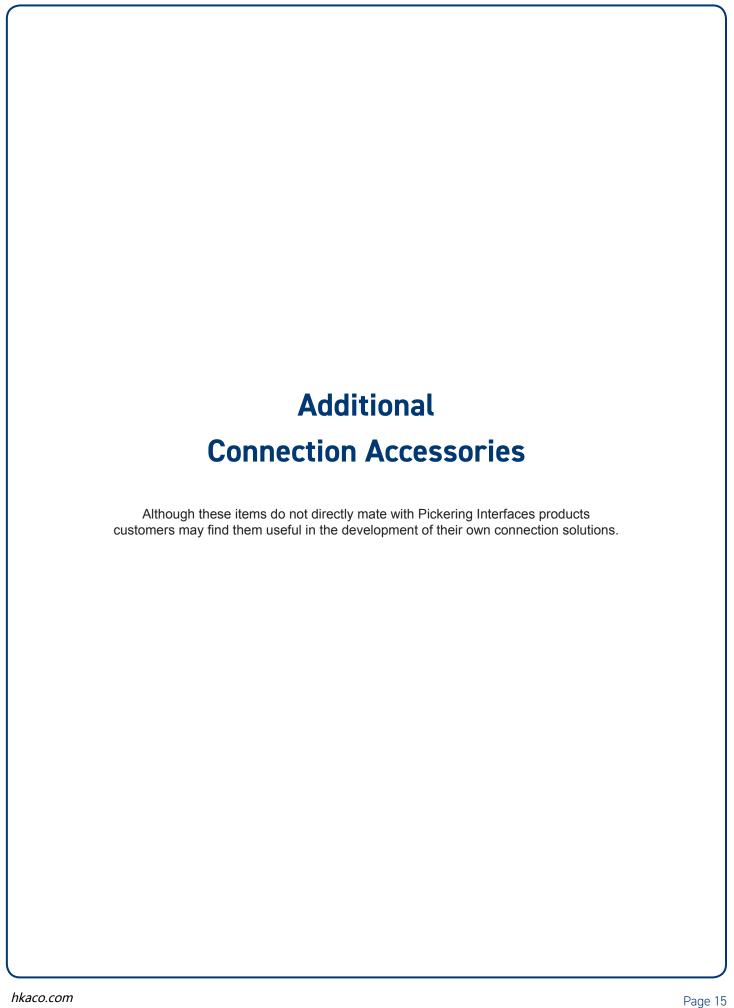


#### **Product Order Codes**

50-Pin D-Type Connector, 5A, Straight PCB Mount Male 40-963-050-SM

C

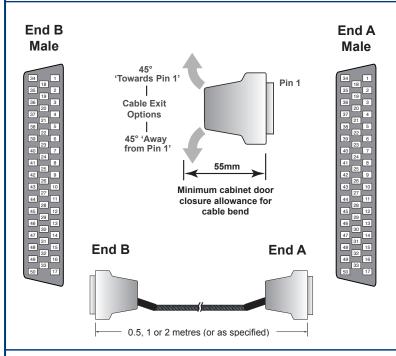
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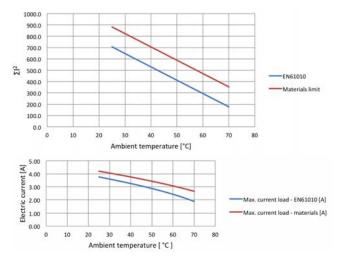
# Standard Voltage 50-Pin D-Type Cable Assy - Male to Male

## This Cable Assembly is Not Suitable for Connection to a Pickering Switching Product

- High Specification Cable
- Highly Flexible Cable with Braided Sleeving
- 45 Degree Cable Exit
- Strain Relief
- Fully Screened Cable Construction

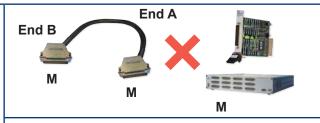


#### Characteristic Plots for 40-970-050-1m



The top graph shows the permitted  $\Sigma$ I² versus ambient temperature in accordance with EN61010 for user exposure to surface temperature and a higher limit imposed by the materials used where the cable is not directly user accessible.

The bottom graph shows the allowed current versus temperature assuming ALL wires carry the same current. Higher currents to the cable rating are permitted on individual wires provided the  $\Sigma$ I<sup>2</sup> is complied with.





#### **Technical Specification**

Connector Type (End A): Gender Securing Method	50-Pin D-Subminiature Male 4-40 UNC screwlocks, male
Connector Type (End B): Gender Securing Method	50-Pin D-Subminiature Male 4-40 UNC screwlocks, male
Cable Assembly Rating: Maximum Current Maximum Voltage Insulation Resistance Connectors:	5A 250VAC/400VDC 1000MOhm
Contact Material Contact Resistance Cable Exit Overall Size (Approx) Cable Type:	Gold plated copper alloy <20mOhm 45° (See Order Codes) H68 x W18.5 x D55mm Individual wires, screened & sleeved
Conductor: Material Strands Resistance Insulation Outer Sleeve Screened Construction Additional Braided Sleeve Cable O/D	Copper 19/0.18 (0.41mm², 21AWG) 0.041Ω/m PFA Polyester Yes Yes 12mm
Minimum Bend Radius Door Closure Allowance	25mm 55mm (see diagram)
Notes: Other cable lengths can be	supplied.

#### **Product Order Codes**

50-Pin D-Type Cable Assy, 5A, Male to Male,

Cable Exit 45° (Away from Pin 1),

 0.5m Long
 40-970-050-0.5m-MM

 1.0m Long
 40-970-050-1m-MM

 2.0m Long
 40-970-050-2m-MM

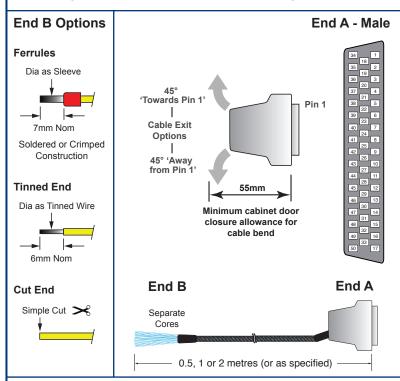
Cable Exit 45° (Towards Pin 1),

0.5m Long A050DM5-050DM5-0A050
1.0m Long A050DM5-050DM5-0A100
2.0m Long A050DM5-050DM5-0A200

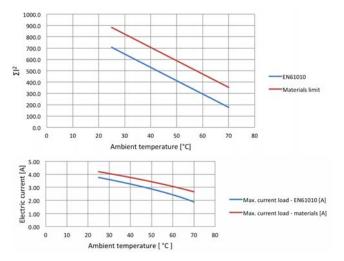
# Standard Voltage 50-Pin D-Type Cable Assy - Male to Unterminated

### This Cable Assembly is Not Suitable for Connection to a Pickering Switching Product

- High Specification and Highly Flexible Cable
- Fully Screened Cable Construction with Braided Sleeve and Strain Relief
- 45 Degree Cable Exit
- Fully Coded Markers to Ensure Easy Connection



#### Characteristic Plots for 40-972-050-1m



The top graph shows the permitted  $\Sigma$ I² versus ambient temperature in accordance with EN61010 for user exposure to surface temperature and a higher limit imposed by the materials used where the cable is not directly user accessible.

The bottom graph shows the allowed current versus temperature assuming ALL wires carry the same current. Higher currents to the cable rating are permitted on individual wires provided the  $\Sigma$ I<sup>2</sup> is complied with.



#### **Technical Specification**

Connector Type (End A): Gender Securing Method	50-Pin D-Subminiature Male 4-40 UNC screwlocks, male
Unterminated End (End B):	
Free Wire Length	130mm nominal
Individual Wire Labelling	To connector pins
Wire End Options	Ferrules, Tinned, Cut End
Cable Assembly Rating:	
Maximum Current	5A
Maximum Voltage	250VAC/400VDC
Insulation Resistance	1000MOhm
Connector:	
Contact Material	Gold plated copper alloy
Contact Resistance	<20mOhm
Cable Exit	45° (See Order Codes)
Overall Size (Approx)	H68 x W18.5 x D55mm
Cable Type:	Individual wires, screened
	& sleeved
Conductor: Material	Copper
Strands	19/0.18 (0.41mm², 21AWG)
Resistance	0.041Ω/m
Insulation	PFA
Outer Sleeve	Polyester
Screened Construction	Yes
Additional Braided Sleeve	Yes
Cable O/D	12mm
Minimum Bend Radius	25mm
Door Closure Allowance	55mm (see diagram)
	( -3 - /

#### Notes:

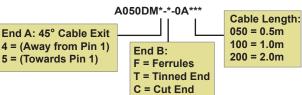
- When using this product please ensure appropriate electrical safety precautions are observed.
- · Other cable lengths can be supplied.

#### **Product Order Codes**

50-Pin D-Type Cable Assy, 5A, Cable Exit Away from Pln 1, Boot Lace Ferrules,

Male to Unterminated, 0.5m Long Male to Unterminated, 1.0m Long Male to Unterminated, 2.0m Long 40-972-050-0.5m-MU 40-972-050-1m-MU 40-972-050-2m-MU

#### Part numbers for other versions:



# Standard Voltage 50-Pin D-Type Connector Block - Male

### This Connector Block is Not Suitable for Connection to a Pickering Switching Product

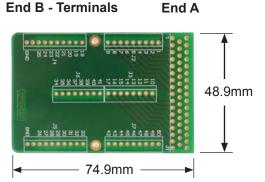
- Connector and PCB Only or Connector, PCB and Backshell
- Male Screwlocks
- Cable Clamp in Backshell
- Easy to Use Rising Cage Screw Terminals

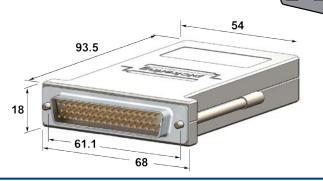
Connector blocks provide a convenient method of termination without the use of custom cabling. However, a higher resistance path, lower capacity ratings and lower voltage ratings are typical.

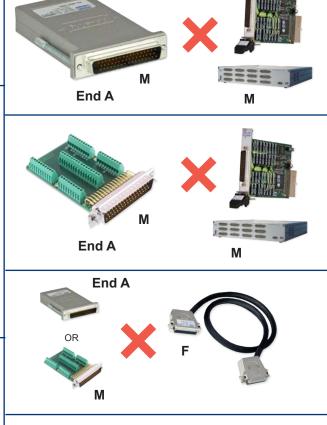
The screw terminals use a rising cage clamp mechanism to minimize risk of copper strand breakage. PTFE cables are recommended for use with this connector block to maximise copper cross-sectional area and insulation properties. The breakdown voltage of the connector block is controlled by clearances to the metal shell. The metal shell includes an internal insulation barrier under the carrier board.

This connector block uses male screwlocks and will not mate to Pickering cables. Connector blocks supplied without a backshell do not include cable strain relief.









#### **Technical Specification**

н		
	Connector Type (End A): Gender Securing Method: Product with Backshell Product without Backshell	50-Pin D-Subminiature Male 4-40 UNC screwlocks, male 4-40 UNC screwlocks, male
ı	Wire Connection (End B):	
ı	Gender	Female
l	Connection Method	Rising cage screw terminals
l	Connector Block Ratings:	
ı	Maximum Current	5A
ı	Maximum Voltage	200VDC
ı	Cable Exit	Rear - 10.3 x 20mm
ı	Overall Size (Approx)	H68 x W18 x D100mm
ı	50-Pin D-Sub:	
ı	Contact Material	Gold plated copper alloy
ı	Contact Resistance	<20mOhm
ı	Screw Terminals:	
ı	Maximum Wire Size	20AWG
ı	Recommended Insulation	PTFE
ı	Additional Cable Clamp	Yes (in backshell)

#### Product Order Codes

50-Pin D-Type Shielded Connector Block, 5A,

Screw Terminal, With Backshell, Male 40-965-050-M Screw Terminal, Without Backshell, Male 92-965-050-M

## Standard Voltage 50-Pin D-Type Connector - Male

# This Connector is Not Suitable for Connection to a Pickering Switching Product

- **Connector only or Connector and Backshell**
- **Male Screwlocks**
- Cable Clamp in Backshell
- **Soldered Cable Termination**

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

Connector and shell are supplied separately to allow the user to determine the direction of the cable exit.

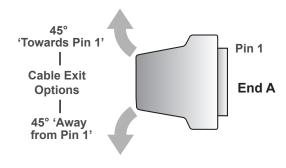
When the product is used without a backshell users should make their own cable strain relief arrangements and ensure appropriate electrical safety precautions are observed.

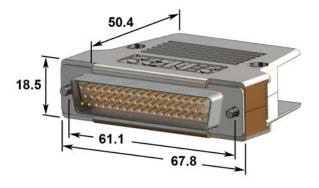


# Male



#### End B **Internal Solder Connection**





#### **Technical Specification**

End A

Gender Securing Method:	Male
Product with Backshell Product without Backshell	4-40 UNC screwlocks, male 4-40 UNC screwlocks, male
Wire Connection (End B):	
Gender	Female
Connection Method	Solder bucket
Connector Ratings:	
Maximum Current	5A
Maximum Voltage	250VAC
Cable Exit:	45°
Cable Exit Size	15mm dia
Overall Size (Approx)	H68 x W18.5 x D55mm
50-Pin D-Sub:	
Contact Material	Gold plated copper alloy
Contact Resistance	20mOhm
Wire Connection:	
Maximum Wire Size	20AWG
Recommended Insulation	PTFE
Additional Cable Clamp	Yes (in backshell)

Connector Type (End A): 50 Pin D Subministure

#### **Product Order Codes**

50-Pin D-Type Connector, 5A, Solder Bucket,

With Backshell, Male 40-960-050-M Without Backshell, Male 92-960-050-M

#### **Custom Termination**

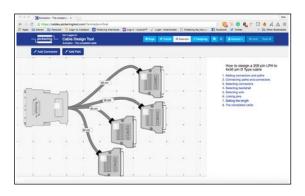
Pickering Interfaces are able to manufacture custom built cable assemblies and backshells that mate with all the connectors we use in our extensive product range and to provide connection solutions for third party products.

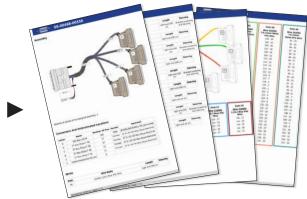
We are able to model and manufacture cable assemblies and other termination arrangements to user notes and drawings, and to deal with simple and complex assemblies, and both small and high volume orders.

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 timescales to a minimum.

# **NEW - Pickering's Cable Design Tool**





Go to pickeringtest.com/cdt to find out more.

Over the years, we have received many requests for customized cabling solutions that are often based on our standard cable assemblies but adjusted to match specific application requirements. To help with this, we have introduced our Cable Design Tool – a new graphically based web tool for cable design. We're excited about the features the software includes:

- Graphical design of customized cable assemblies
- Built-in library of standard cable sets to be used as the basis for customization or cables can just be defined from scratch
- The ability to store cable assemblies in the Cloud and develop over time
- Each cable design has a documentation pdf file detailing all of the specifications
- Very detailed design characteristics including the selection of connector types, wire type, pin definitions, pin and cable labeling, cable bundling, length selection, sleeving, comments, etc.
- Runs on popular browsers, Windows, Mac and Linux
- Fully supported on popular tablets: iPad and Android
- Built-in tutorials allow you to get quickly up to speed

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.

# **Appendix - Standard Voltage Part Number Listing**

	Cables: Standard Voltage 50-Pin D-Type Connector to Connector								
E	End 1		End 2	Product Order Code/Part Number			Mates with a Pickering	Data Sheet	
Gender	Cable Exit	Gender	Cable Exit	0.5m Long	1m Long	2m Long	Switching I	Page	
Mala	45° Away from Pin 1	Famala	45° Away from Pin 1	40-970-050-0.5m-MF	40-970-050-1m-MF	40-970-050-2m-MF	Yes		
Male	45° Towards Pin 1	Female	45° Towards Pin 1	A050DM5-050DF5-0A050	A050DM5-050DF5-0A100	A050DM5-050DF5-0A200	(Female end)	4	
Female	45° Away from Pin 1 45° Towards Pin 1	Famala	45° Away from Pin 1	40-970-050-0.5m-FF	40-970-050-1m-FF	40-970-050-2m-FF	Vas	_	
remale		Female	45° Towards Pin 1	A050DF5-050DF5-0A050	A050DF5-050DF5-0A100	A050DF5-050DF5-0A200	Yes	5	
Male	45° Away from Pin 1	Mala	45° Away from Pin 1	40-970-050-0.5m-MM	40-970-050-1m-MM	40-970-050-2m-MM	No	16	
iviale	45° Towards Pin 1	Male	45° Towards Pin 1	A050DM5-050DM5-0A050	A050DM5-050DM5-0A100	A050DM5-050DM5-0A200	INO	16	

	Cables: Standard Voltage 50-Pin D-Type Connector to Unterminated								
E	End 1	End 2 Unterminated	Product Order Code/Part Number			Mates with a Pickering	Data Sheet		
Gender Cable Exit	Options	0.5m Long	1m Long	2m Long	Switching Product	Page			
	45° Away from	Boot Lace Ferrules	40-972-050-0.5m-FU	40-972-050-1m-FU	40-972-050-2m-FU				
		Tinned Ends	A050DF4-T-0A050	A050DF4-T-0A100	A050DF4-T-0A200				
Famala	Pin 1	Cut End	A050DF4-C-0A050	A050DF4-C-0A100	A050DF4-C-0A200	Vac	6		
Female	45°	Boot Lace Ferrules	A050DF5-F-0A050	A050DF5-F-0A100	A050DF5-F-0A200	Yes	U		
	Towards	Tinned Ends	A050DF5-T-0A050	A050DF5-T-0A100	A050DF5-T-0A200				
	Pin 1	Cut End	A050DF5-C-0A050	A050DF5-C-0A100	A050DF5-C-0A200				
	45°	Boot Lace Ferrules	40-972-050-0.5m-MU	40-972-050-1m-MU	40-972-050-2m-MU	No	17		
	Away from	Tinned Ends	A050DM4-T-0A050	A050DM4-T-0A100	A050DM4-T-0A200				
Male	Pin 1	Cut End	A050DM4-C-0A050	A050DM4-C-0A100	A050DM4-C-0A200				
iviale	45°	Boot Lace Ferrules	A050DM5-F-0A050	A050DM5-F-0A100	A050DM5-F-0A200		''		
	Towards	Tinned Ends	Tinned Ends A050DM5-T-0A050 A050DM5-T-0A100 A050DM5-T-0A200						
	Pin 1	Cut End	A050DM5-C-0A050	A050DM5-C-0A100	A050DM5-C-0A200				

Cable Connectors and Connector Blocks: Standard Voltage 50-Pin D-Type							
Type	Gender	Cable Exit	Product Order Co	de/Part Number	Mates with a Pickering	Data Sheet Page	
Type			With Backshell	Without Backshell	Switching Product		
Connector	Female	Rear	40-965-050-F	92-965-050-F	Yes	7	
Block	Male		40-965-050-M	92-965-050-M	No	18	
Cable	Female	45° Ontions	40-960-050-F	92-960-050-F	Yes	9	
Connector	Male	45° Options	40-960-050-M	92-960-050-M	No	19	

Breakouts and PCB Connectors: Standard Voltage 50-Pin D-Type							
Туре	Mount	Gender	Cable Exit	Product Order Code/Part Mates with a Pickering Number Switching Product		Data Sheet Page	
Deselvent	DIN Rail Mount	Female	N/A	40-967-050-F		8	
Breakout		Male	N/A	40-967-050-M		12	
	Right Angle	Female	N/A	40-963-050-RF	Na	10	
PCB	PCB Mount	Male	N/A	40-963-050-RM	No	13	
Connector	Straight PCB Mount	Female	N/A	40-963-050-SF		11	
		Male	N/A	40-963-050-SM		14	