

3M Electronic Solutions Division



# Simply Connected Solutions

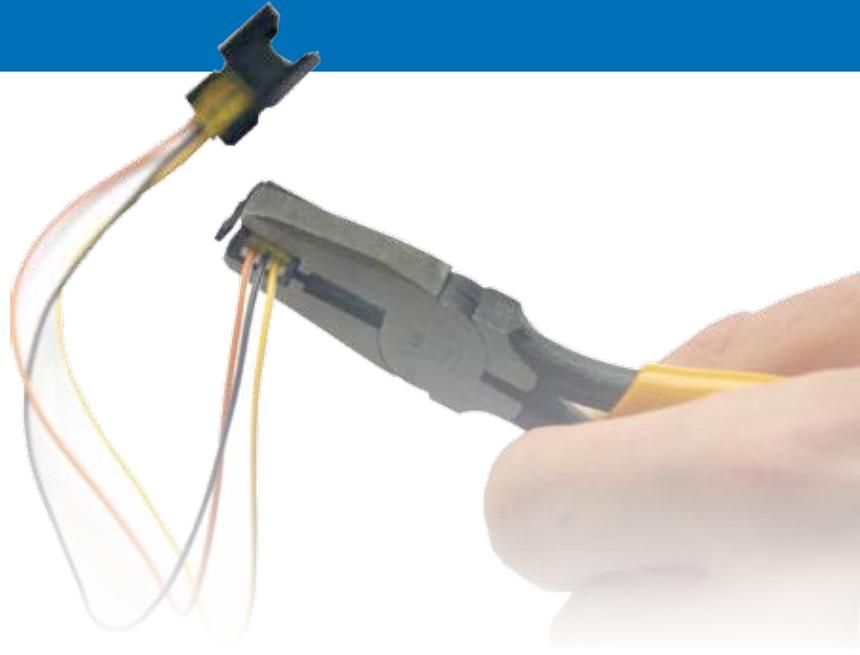
For Factory Automation and Industrial Controls



# Introduction

3M offers a comprehensive range of interconnect solutions for the electronics industry, with a product portfolio that includes connectors, cables, cable assemblies and assembly tooling for a wide variety of applications.

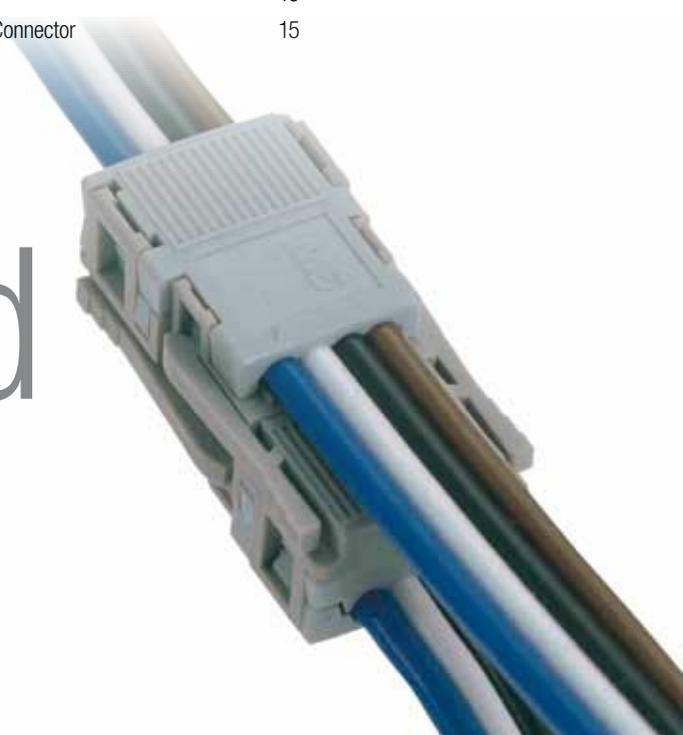
3M is dedicated to innovation, continually developing new products that become an important part of everyday life across many diverse markets. A number of 3M solution categories are based on custom-designed products for specialized applications. 3M Interconnect Solutions can help you design, modify and customize your product as well as help you seamlessly integrate our products into your manufacturing process on a global basis.



# Content

<b>1. Mini-Clamp Connectors</b>	<b>3</b>
Mini-Clamp II Wiremount Plug	4
Mini-Clamp II Wiremount Socket	5
Mini-Clamp Boardmount Plug, SMT	6
Mini-Clamp Boardmount Socket, Through Hole	6
Accessories	7
Mating Guide	8
<b>2. Power Clamp Connectors</b>	<b>9</b>
Power Clamp Wiremount Socket	10
Cables	11
Power Clamp Branch Connector	11
Power Clamp Boardmount Header	12
<b>3. Link Connectors</b>	<b>13</b>
Wiremount, Hemaphroditic	14
Cables	15
Boardmount Connector	15

# Simply Connected



## 3M™ Mini-Clamp Connectors

3M Mini-Clamp Connectors are designed to provide connection reliability and cost performance in I/O applications commonly found in a wide range of sensor control systems, including Factory Automation and Industrial Controls.

Mini-Clamp products use the advantage of 3M's IDC technology which does not require any special tooling or pretreatment of cables, and can be terminated using a standard pair of pliers. Benefits of the Mini-Clamp products include a simple installation process that does not create material debris or waste; a labor saving IDC termination process relative to traditional interconnect alternatives; ease of assembly for system building; and a design that provides for consistent quality and reliability.

### Typical Applications:

- Factory Automation and Industrial Controls
- Semiconductor / LCD Manufacturing Machines
- Medical
- Packaging Systems
- Conveyor Systems
- Motion Test and Measurement Systems
- Traffic Light and Control Systems
- Elevators / Lift Systems
- Elevator Controls
- LED Lighting
- Pressure Sensors (Air, Water)
- Base Press Control Electronics
- Food and Packaging Industries
- Automotive and Metal Industries

The Mini-Clamp product family includes more than 40 different connector types. One of them can fulfill your requirements.

### Fast Facts

- Easy, labor saving and reliable IDC termination
- Easy field termination with no special wire preparation- no stripping, tinning or special tooling
- Design accepts multiple wire diameters 0.8 to 2.0 mm (.031 to .079") / conductor sizes (20-26 AWG / 0.14 to 0.5 mm<sup>2</sup>)
- Integrated wire retention cover design to retain the wires while terminating to the IDC
- Wiring reduction solution when leveraging the complete 3M offering
- Mating latches provide a reliable interconnection in demanding applications
- Compact design saves board space
- High number of mating cycles (300)
- Current rating (3 Amps)



# Wiremount Connectors

## 3M™ Mini-Clamp II Plug 2 mm, IDC, Wiremount Connector



2 mm, IDC, Wiremount Plug



2 mm, IDC, Wiremount Plugs

3M Mini-Clamp Connectors can be used as a part of a serial field bus system solution that is designed to reduce the space of sensor wires in factory automation machines when compared to parallel wiring approaches. The total field installation costs (assembly and wiring) can be reduced when Mini-Clamp products are used – especially in combination with the 3M™ Link Connector offering. The termination process of traditional connectors (crimp connectors or terminal blocks) is complicated, labor intensive and typically creates debris and waste which may be an issue in clean room environments found in the semiconductor, LCD and medical applications. The Mini-Clamp connector will provide for an easier and debris-free wire termination process.

### Fast Facts

- Designed to accommodate typical wiring specifications per Europe and North America suppliers
- Easy, quick and reliable IDC termination
- Integrated cable retention
- Design accepts multiple wire size diameter
- No special tooling needed
- Latches provide reliable interfaces
- Compact design saves board space
- High number of mating cycles
- RoHS compliant

### Specifications

<b>Material:</b>	Glass Reinforced Thermoplastic Body & Lower Cover, Transparent Thermoplastic Cover
<b>Flammability:</b>	UL 94V-0
<b>Wire Accomodation:</b>	Copper Alloy, 7-19 Bare and Tinned Strands, 0.14-0.50 mm <sup>2</sup> , 20-26 AWG
<b>Current Rating:</b>	3.0 Amps
<b>Temperature Rating :</b>	-20 °C to 85 °C

#### Available Part Numbers

3M Part Number	Outside Diameter Range of Wire	Wire Gauge [AWG / mm <sup>2</sup> ]	Color	Tech Sheet
37103-A165-00E MB	1.2 - 1.6 mm	20-24 / 0.25-0.50	Blue	TS-2233
37104-A165-00E MB	[.063 - .079"]			
37103-A206-00E MB	1.6 - 2.0 mm	Gray		
37104-A206-00E MB	[.047 - .063"]			
37103-A124-00E MB	1.0 - 1.2 mm	Green		
37104-A124-00E MB	[.039 - .047"]			
37103-B163-00E MB	1.2 - 1.6 mm	24-26 / 0.14-0.25	Orange	
37104-B163-00E MB	[.047 - .063"]			
37103-B101-00E MB	0.8 - 1.0 mm	Red		
37104-B101-00E MB	[.031 - .039"]			
37103-B122-00E MB	1.0 - 1.2 mm	Yellow		
37104-B122-00E MB	[.039 - .047"]			



2 mm, IDC, Wiremount Sockets

The wiremount plug and socket connectors have an integrated guide and retention feature built into the cover, which provides reliable positioning of the individual wires. The semi-transparent cover allows for visual inspection of the wire position prior to the termination of the wire to the IDC. This IDC style connector helps reduce maintenance work by providing higher connection reliability and helps alleviate the need for cable preparation such as stripping and tinning. Polarizing tabs help provide proper mating and latching devices help provide a reliable connection, even under severe conditions such as mechanical stress and vibration in industrial environments.



2 mm, IDC, Wiremount, Sockets

Mini-Clamp

## 3M™ Mini-Clamp II Socket

2 mm, IDC, Wiremount, Connector

Available Part Numbers				
3M Part Number	Outside Diameter Range of Wire	Wire Gauge [AWG / mm <sup>2</sup> ]	Color	Tech Sheet
37303-A165-00E MB	1.2 - 1.6 mm [.063 - .079"]	20-24 / 0.25-0.50	Blue	TS-2234
37303-A165-0PE MB				
37304-A165-00E MB				
37304-A165-0PE MB				
37303-A206-00E MB	1.6 - 2.0 mm [.047 - .063"]		Gray	
37303-A206-0PE MB				
37304-A206-00E MB				
37304-A206-0PE MB				
37303-A124-00E MB	1.0 - 1.2 mm [.039 - .047"]		Green	
37303-A124-0PE MB				
37304-A124-00E MB				
37304-A124-0PE MB				
37303-B163-00E MB	1.2 - 1.6 mm [.047 - .063"]	24-26 / 0.14-0.25	Orange	
37303-B163-0PE MB				
37304-B163-00E MB				
37304-B163-0PE MB				
37303-B101-00E MB	0.8 - 1.0 mm [.031 - .039"]		Red	
37303-B101-0PE MB				
37304-B101-00E MB				
37304-B101-0PE MB				
37303-B122-00E MB	1.0 - 1.2 mm [.039 - .047"]		Yellow	
37303-B122-0PE MB				
37304-B122-00E MB				
37304-B122-0PE MB				

= OPE with latch for panel mounting

## Fast Facts

- Designed to accommodate typical wiring specifications per Europe and North America suppliers.
- Easy, quick and reliable IDC termination
- Integrated cable retention
- Design accepts multiple wire size diameter
- No special tooling needed
- Latches provide reliable interfaces
- Compact design saves board space
- High number of mating cycles
- RoHS compliant

## Specifications

<b>Material:</b>	Glass Reinforced Thermoplastic Body & Lower Cover, Transparent Thermoplastic Cover
<b>Flammability:</b>	UL 94V-0
<b>Wire Accomodation:</b>	Copper Alloy, 7-19 Bare and Tinned Strands, 0.14-0.50 mm <sup>2</sup> , 20-26 AWG
<b>Current Rating:</b>	3,0 Amps
<b>Temperature Rating :</b>	-20 °C to 85 °C

## 3M™ Mini-Clamp Socket

2 mm, Surfacement, Right Angle  
2 mm, Through-hole, Straight

The newest addition to the 3M Mini-Clamp Connector product line is the right angle surfacement socket which has a compact design that retains the reliable dual-wipe, high mating cycle and positive mating latch that provides a reliable interconnect in demanding applications. This socket includes three options for properly placing and locating the component on the PC board, and has a robust PC board retention tab design. Dust caps are also available for use in more harsh and dusty environments.

Mini-Clamp Boardmount Sockets, 372 Series, 2 mm are offered in a 180 degree (straight/vertical) solder tail as mating components for wire-mount plugs. These boardmount sockets are available in single three or four pin configurations, and also in 6 (2 x 3), 8 (2 x 4), 12 (4 x 3) and 16 (4 x 4) position blocks that can accommodate multiple wiremount plugs. Dust caps are also available for use in more harsh and dusty environments.

### Fast Facts

- Low profile design minimizes overall thickness
- Compact design saves board space
- Multiple PCB locating post layouts to ensure competitive compatibility
- Solder tab design helps ensure a reliable solder joint
- Mating latch feature provides a reliable interconnection in demanding applications
- High number of mating cycles (300)
- Maximum current rating of 3 Amps
- Dust cover available for use in harsh environment
- Enables easy and simple interconnecting of sensors or other devices
- RoHS compliant
- SMT Connectors in type & reel packaging

### Specifications

<b>Material:</b>	LCP (for SMT) / Nylon (for through-hole)
<b>Flammability:</b>	UL 94V-0
<b>Current Rating:</b>	3,0 Amps
<b>Temperature Ratings:</b>	-20 °C to +85 °C ambient (1.0 A max.) -20 °C to +75 °C ambient (2.0 A max.) -20 °C to +60 °C ambient (3.0 A max.) (Note: UL rating is 65 °C at 3.0 A, 32 V)



Surfacement, Right Angle

Through-hole, Straight

#### Through-hole, Straight

Available Part Numbers			
3M Part Number	Number of rows / contacts	Locating Post	Tech Sheet
37203-62M3-003 PL	1 / 03	None	TS-2093
37203-62A3-003 PL		Asymmetric	
37203-62B3-003 PL		Symmetric	
37204-62M3-004 PL	1 / 04	None	
37204-62A3-004 PL		Asymmetric	
37204-62B3-004 PL		Symmetric	
37206-62M3-003 PL	2 / 06	None	
37206-62A3-003 PL		Asymmetric	
37206-62B3-003 PL		Symmetric	
37208-62M3-004 PL	2 / 08	None	
37208-62A3-004 PL		Asymmetric	
37208-62B3-004 PL		Symmetric	
37212-62M3-003 PL	4 / 12	None	
37212-62A3-003 PL		Asymmetric	
37212-62B3-003 PL		Symmetric	
37216-62M3-004 PL	4 / 16	None	

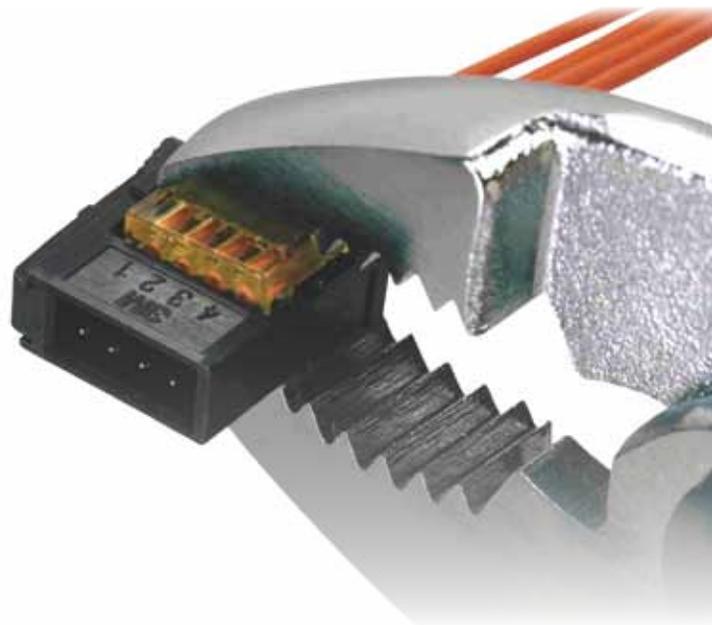
#### Surfacement, Right Angle

Available Part Numbers			
3M Part Number	Number of rows / contacts	Locating Post	Tech Sheet
37203-1AE0-003 PL	1 / 03	Asymmetric	TS-2271
37203-1BE0-003 PL		Symmetric	
37203-12E0-003 PL		None	
37204-1AE0-004 PL	1 / 04	Asymmetric	
37204-1BE0-004 PL		Symmetric	
37204-12E0-004 PL		None	



Accessories	Description	3M Part Number
	Dust cover for boardmount sockets	3 pos-37803-1000-00 4 pos-37804-1000-00
	Pliers	E-9Y
	Pliers	E-9E

Tools E-9Y and E-9E can be used for termination of the wires. Termination works also with simple pair of pliers.



# Mating Guide

		Mini Clamp II, Wiremount Plug Connectors (TS-2233)												
		37103-A165-00E MB	37103-A206-00E MB	37103-A124-00E MB	37103-B163-00E MB	37103-B101-00E MB	37103-B122-00E MB	37104-A165-00E MB	37104-A206-00E MB	37104-A124-00E MB	37104-B163-00E MB	37104-B101-00E MB	37104-B121-00E MB	
 <p>Plug</p>														
	 <p>Socket</p>	37303-A165-00E MB	✓	✓	✓	✓	✓	✓						
		37303-A165-0PE MB	✓	✓	✓	✓	✓	✓						
		37303-A206-00E MB	✓	✓	✓	✓	✓	✓						
		37303-A206-0PE MB	✓	✓	✓	✓	✓	✓						
		37303-A124-00E MB	✓	✓	✓	✓	✓	✓						
		37303-A124-0PE MB	✓	✓	✓	✓	✓	✓						
		37303-B163-00E MB	✓	✓	✓	✓	✓	✓						
		37303-B163-0PE MB	✓	✓	✓	✓	✓	✓						
		37303-B101-00E MB	✓	✓	✓	✓	✓	✓						
		37303-B101-0PE MB	✓	✓	✓	✓	✓	✓						
		37303-B122-00E MB	✓	✓	✓	✓	✓	✓						
		37303-B122-0PE MB	✓	✓	✓	✓	✓	✓						
	 <p>Panelmount Socket</p>	37304-A165-00E MB							✓	✓	✓	✓	✓	✓
		37304-A165-0PE MB							✓	✓	✓	✓	✓	✓
		37304-A206-00E MB							✓	✓	✓	✓	✓	✓
		37304-A165-0PE MB							✓	✓	✓	✓	✓	✓
		37304-A124-00E MB							✓	✓	✓	✓	✓	✓
		37304-A124-0PE MB							✓	✓	✓	✓	✓	✓
37304-B163-00E MB								✓	✓	✓	✓	✓	✓	
37304-B163-0PE MB								✓	✓	✓	✓	✓	✓	
37304-B101-00E MB								✓	✓	✓	✓	✓	✓	
37304-B101-0PE MB								✓	✓	✓	✓	✓	✓	
37304-B122-00E MB								✓	✓	✓	✓	✓	✓	
37304-B122-0PE MB								✓	✓	✓	✓	✓	✓	
 <p>1-Row Boardmount Socket, Straight</p>	37203-1AE0-003 PL	✓	✓	✓	✓	✓	✓							
	37203-1BE0-003 PL	✓	✓	✓	✓	✓	✓							
	37203-12E0-003 PL	✓	✓	✓	✓	✓	✓							
	37204-1AE0-004 PL							✓	✓	✓	✓	✓	✓	
	37204-1BE0-004 PL							✓	✓	✓	✓	✓	✓	
	37204-12E0-004 PL							✓	✓	✓	✓	✓	✓	
	 <p>1-Row Boardmount Socket, Right Angle</p>	37203-62A3-003 PL	✓	✓	✓	✓	✓	✓						
		37203-62B3-003 PL	✓	✓	✓	✓	✓	✓						
	 <p>2-Row Boardmount Socket, Straight</p>	37204-62A3-004 PL							✓	✓	✓	✓	✓	
		37204-62B3-004 PL							✓	✓	✓	✓	✓	✓
	 <p>4-Row Boardmount Socket, Straight</p>	37206-62A3-003-PL	✓	✓	✓	✓	✓	✓						
		37206-62B3-003 PL	✓	✓	✓	✓	✓	✓						
37208-62A3-004 PL								✓	✓	✓	✓	✓	✓	
37208-62B3-004 PL								✓	✓	✓	✓	✓	✓	
37212-62M3-003 PL		✓	✓	✓	✓	✓	✓							
37212-62A3-003 PL		✓	✓	✓	✓	✓	✓							
	37212-62B3-003 PL	✓	✓	✓	✓	✓	✓							
	37216-62M3-004 PL							✓	✓	✓	✓	✓	✓	



## 3M™ Power Clamp Connectors

3M Power Clamp products use the advantage of 3M's IDC technology and are designed to provide a safe and reliable electrical connection. These connectors do not require any special tooling or pre-treatment of cables, and can be terminated using a standard pair of pliers. Benefits of the Power Clamp products include a simple installation process that does not create material debris or waste; a labor saving IDC termination process relative to traditional interconnect alternatives; ease of assembly for system building; and a design that provides for consistent quality and reliability.

The Power Clamp program consists of wiremount socket connectors for different sizes of wires and applications, branch connectors and through-hole boardmount headers.

### Typical Applications:

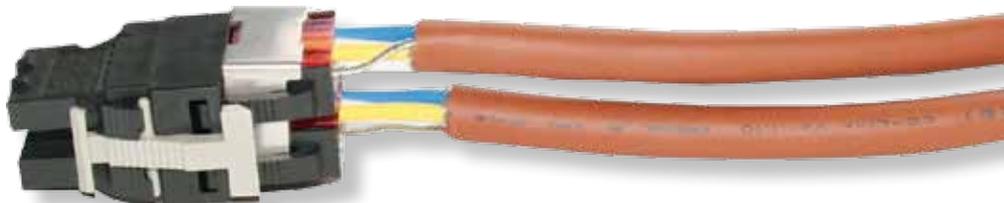
- Factory Automation
- Industrial Controls
- Semiconductor / LCD Manufacturing Machines
- Medical
- Elevators/Lift Systems
- Elevator Controls
- Flowmeters
- Packaging Systems
- Conveyor Systems
- Motion Test and Measurement Systems
- Traffic Light and Control Systems
- Elevators/Lift Systems
- Elevator Controls
- Flowmeters
- Pressure Sensors (Air, Water)
- Gaming
- LED Lighting
- Signage
- Semiconductor / LCD Manufacturing Machines
- Base Press Control Electronics
- Food and Packaging Industries
- Automotive and Metal Industries

## Power Clamp – Application

The Power Clamp offering is suitable for CLPA's CC-Link open technology field level networking applications and protocols. The applications include integrating a wide range of automation devices, from numerous suppliers, on a single network. They are also used in many other applications, e.g. applications that require easy and fast field termination.

## Fast Facts

- Design accepts multiple wire diameters 1.6 to 3.0 mm (.063 to .118") / conductor sizes (18-20 AWG / 0.5 to 0.75 mm<sup>2</sup>)
- Simple installation process
- Avoids material debris and waste
- Integrated wire retention cover design to retain the wires while terminating to the IDC
- Wiring reduction solution when leveraging the complete 3M offering
- Mating latches provide a reliable interconnection in demanding applications
- High number of mating cycles
- Current rating (10 Amps)
- Polarization ensures proper interconnecting of mated pairs

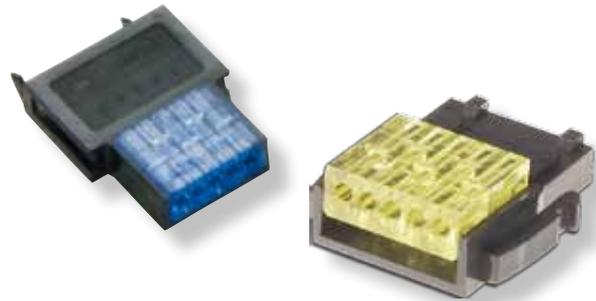




## 3M™ Power Clamp Connectors

3 mm, IDC, 5 Position, Wiremount Connector

3M Power Clamp Connectors can be used as a part of a field bus interconnection network that are designed to ensure safe and reliable interface of wires in factory automation machines as well as in other applications. A significant benefit is the low cost of installation for assembling and wiring. Compared with cost and labor intensive, traditional terminating processes like crimping or screwing, the well-known and established IDC technology is low-priced, fast, simple and safe. The well-elaborated product design with semi-transparent and colored covers, integrated strain relief or latching mechanism provides reliability to the users and ensures a durable and failure-free operation. Cost and time exposure for maintenance do not apply.



3 mm, IDC, 5 Position, Wiremount Connector

### Specifications

<b>Body Material:</b>	Nylon
<b>Cover Material:</b>	Polycarbonate
<b>Flammability:</b>	UL 94V-0
<b>Wire Accomodation:</b>	18 AWG, Stranded, Bare or Tinned Cu 20 AWG, Stranded, Bare or Tinned Cu (Contact 3M for additional wire accomodat-ions)
<b>Current Rating:</b>	10 A maximum (1 contact) 7 A maximum (2 or more contacts)
<b>Temperature Rating:</b>	-20 °C to +75 °C ambient

### Fast Facts

- Easy, labor saving, and reliable IDC termination
- Easy field termination with no special tooling or wire preparation – no stripping or tinning
- Semi-transparent color-coded covers for wire inspection and wire retention
- CC-Link Communication Interconnect Standard
- One-touch latching mechanism maintains a reliable interconnection in demanding field applications and requires only one hand to easily mate and unmate
- Polarization ensures proper interconnecting of mated pairs
- RoHS compliant

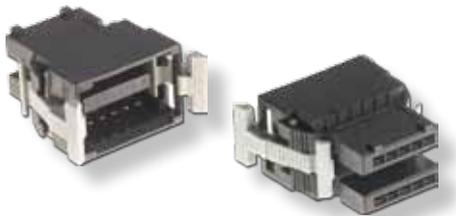
Available Part Numbers					
3M Part Number	Polarization Key	Outside Diameter Range of Wire	Wire Gauge [AWG / mm <sup>2</sup> ]	Color	Tech Sheet
<b>Socket Connectors</b>					
35505-6080-A00 GF	A (wide)	2.2 - 3.0 mm [.087 - .118"]	18 / 0.75	Clear	TS-2273
35505-6180-A00 GF		2.0 - 2.3 mm [.079 - .091"]		Blue	
35505-6200-A00 GF		1.6 - 2.0 mm [.063 - .079"]	20 / 0.50	Yellow	
35505-6000-B0M GF*	B (narrow)	For CC-Link Cable		Red	
<b>Plug Connectors</b>					
35805-6080-A00 GF	A (wide)	2.2 - 3.0 mm [.087 - .118"]	18 / 0.75	Clear	TS-2285
35805-6080-APO GF		2.2 - 3.0 mm [.087 - .118"]		Clear	
35805-6180-A00 GF		2.0 - 2.3 mm [.079 - .091"]		Blue	
35805-6180-APO GF		2.0 - 2.3 mm [.079 - .091"]		Blue	
35805-6200-A00 GF	A (wide)	1.6 - 2.0 mm [.063 - .079"]	20 / 0.50	Yellow	
35805-6200-APO GF		1.6 - 2.0 mm [.063 - .079"]		Yellow	
35805-6000-B0M GF*	B (narrow)	2.2 - 3.0 mm [.087 - .118"]		Red	
35805-6000-BPM GF*		2.2 - 3.0 mm [.087 - .118"]		Red	

\* Connects communication cable with 3 discrete and 1 drain wire.  
Twist drain wire 7 or more times to tighten strands and insert into wire position #5.



## Cables for Wiremount Connectors

Compatible cables for CC-Link applications				
3M Part Number	Description	Applicative Connector	Tech Sheet	
79100-110SBH	CC-Link V1.10 Cable	35505-6000-B0M GF	TS-2321	
79100-110SBZ-5	CC-Link V1.10 Cable Flexible Type	35505-6000-B0M GF	TS-2324	



3 mm, 2 Sockets and 2 Plugs, 5 Position x 4

## 3M™ Power Clamp Branch Connector

3 mm, 2 Sockets and 2 Plugs, 5 Position x 4

The Branch Connector is a very useful component in many field bus applications. It divides one input line into three output lines and provides significant labor and material cost savings. The positive mating latch provides a reliable interconnect to the 2-row boardmount header in demanding applications. Polarization features ensure accurate mating of boardmount headers and wiremount socket connectors.

## Fast Facts

- Branch interconnect takes one input and splits it into 3 outputs
- Latching clip retains the Branch Connector to the 2-row header
- CC-Link Communication Interconnect Standard
- One-touch latching mechanism maintains a reliable interconnection in demanding field applications and requires only one hand to easily mate and unmate
- Polarization ensures proper interconnection of mated pairs
- RoHS compliant.

Available Part Numbers		
3M Part Number	Polarization Key	Tech Sheet
35720-L200-A00 AK	A (wide)	TS-2275
35720-L200-B00 AK	B (narrow)	

## Specifications

<b>Body Material:</b>	Nylon
<b>Latch Material:</b>	PBT
<b>Flammability:</b>	UL 94V-0
<b>Current Rating:</b>	10 A maximum (1 contact) 7 A maximum (2 or more contacts)
<b>Temperature Rating:</b>	-20 °C to +75 °C ambient

## 3M™ Power Clamp Header

3 mm, 2 Row, Straight, 10 Position, Boardmount Connector



5 position x 2 Boardmount Connector

The 3M Power Clamp Connector 356 Series product line represents the interface components from wire-to-board. It includes 2-row, 2 x 5 position boardmount headers which have a compact design that retains the reliable contacts, high mating cycle and positive mating latch. This provides a reliable interconnect in demanding applications. These headers include two options for properly placing and locating the component on the PC board, and have a robust PC board retention tab design. Polarization features ensure accurate mating of branch connector and wiremount socket connectors.

### Specifications

<b>Material:</b>	Nylon / PBT
<b>Flammability:</b>	UL 94V-0
<b>Current Rating:</b>	10 A maximum (1 contact) 7 A maximum (2 or more contacts)
<b>Temperature Rating:</b>	-20 °C to +75 °C

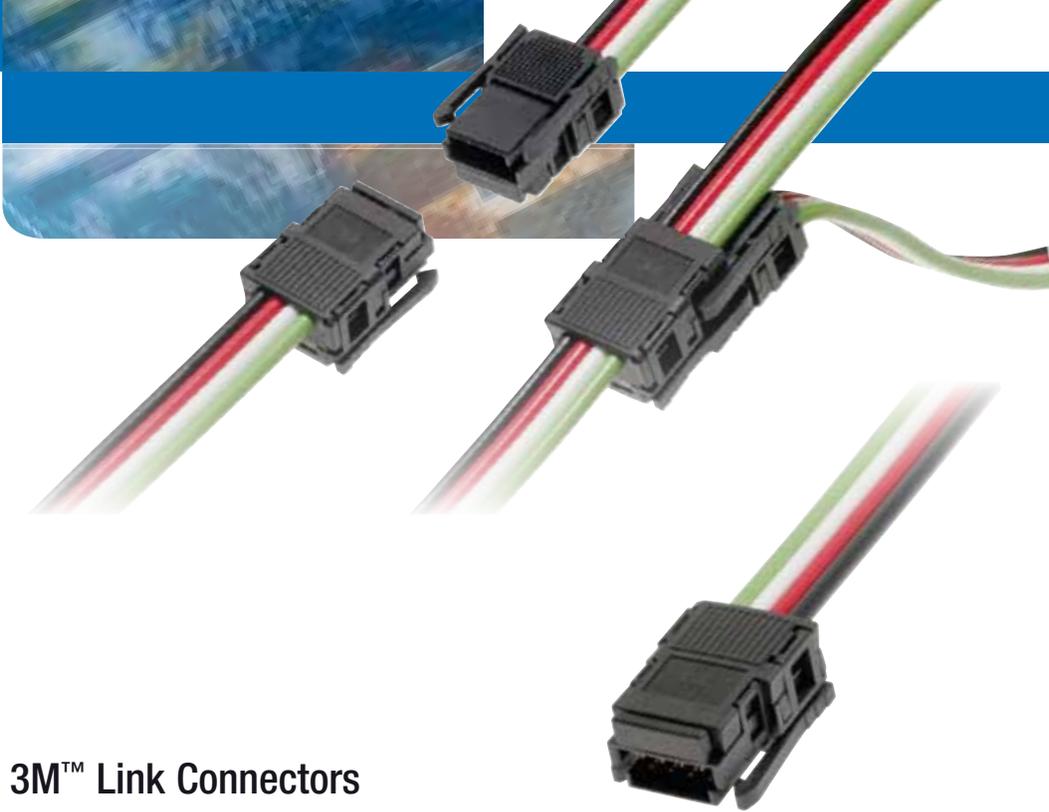
Available Part Numbers				
3M Part Number	Number of rows/contacts	Height of Stand-off	Polarization	Tech Sheet
35605-6114-A00 PE	1 / 05, Straight		A (wide)	TS-2274
35605-6114-B00 PE			B (narrow)	
35610-6114-A00 PE	2 / 10, Straight		A (wide)	
35610-6114-B00 PE			B (narrow)	
35605-5153-A00 PE	1 / 05, Right Angle	0.5 mm	A (wide)	TS-2303
35605-5153-AP0 PE		1.7 mm	B (narrow)	
35605-5153-B00 PE		0.5 mm		
35605-5153-BP0 PE		1.7 mm		
35610-5253-A00 PE	2 / 10, Right Angle		A (wide)	
35610-5253-B00 PE			B (narrow)	



### Fast Facts

- Accepts two 5-position Power Clamp Wiremount Sockets
- Side-to-side stackable at 9 mm pitch on PCB
- Integrated press-fit board retention pins prevent incorrect mounting and retain the connector to the board during wave soldering
- CC-Link Communication Interconnect Standard
- One-touch latching mechanism maintains a reliable interconnection in demanding field applications
- Polarization ensures proper interconnecting of mated pairs
- RoHS compliant

		Power Clamp, Wiremount Sockets (TS-2273)				
		35505-6080-A00 GF	35505-6180-A00 GF	35505-6200-A00 GF	35505-6000-A00 GF	
Power Clamp, Wiremount Plug (TS-2285)	Socket					
	Standard Plug					
	Panelmount Plug	35805-6080-A00 GF	✓	✓	✓	
		35805-6080-AP0 GF	✓	✓	✓	
		35805-6180-A00 GF	✓	✓	✓	
		35805-6180-AP0 GF	✓	✓	✓	
		35805-6200-A00 GF	✓	✓	✓	
		35805-6200-AP0 GF	✓	✓	✓	
		35805-6000-B0M GF*				✓
		35805-6000-BPM GF*				✓
Power Clamp, Boardmount Plug (TS-2274 and TS-2303)	2-Row Boardmount Plug, Straight	35605-6114-A00 PE	✓	✓	✓	
		35605-6114-B00 PE			✓	
		35610-6114-A00 PE	✓	✓	✓	
		35610-6114-B00 PE			✓	
	1-Row Boardmount Plug, Right Angle	35605-5153-A00 PE	✓	✓	✓	
		35605-5153-AP0 PE	✓	✓	✓	
		35605-5153-B00 PE			✓	
		35605-5153-BP0 PE			✓	
		35610-5253-A00 PE	✓	✓	✓	
		35610-5253-B00 PE			✓	
	2-Row Branch Connector	35720-L200-A00 AK	✓	✓	✓	
		35720-L200-B00 AK			✓	



## 3M™ Link Connectors

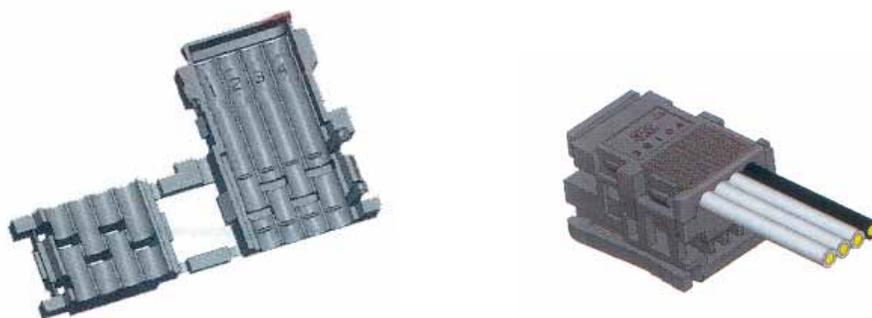
3M Link Connectors are designed to meet the requirements of the CC-Link standard and to enable T-Tab terminations as well as mid-cable terminations. The connectors' hermaphroditic design reduces the number of components required to interconnect; well-approved IDC termination process enables easy field termination and reduces labor cost relative to traditional interconnect alternatives; in combination with Power Clamp or Mini-Clamp products wire reduction up to 70%; suitable for conductor sizes of 18 and 20 AWG of discrete wires or flat ribbon cables.

## Typical Applications

- Factory Automation and Process Control
- Industrial Electronics
- Industrial Automation Field Networks
- Building Appliances
- Railway Technology
- Commercial Vehicles
- Automotive Electronics
- Conveying Systems
- Elevators, Raise and Lowering Equipment
- LED Lighting

## Link Connector – Application

3M Link Connector products use the advantages of 3M's IDC technology and are designed to provide a safe and reliable electrical connection in industrial automation field networks or between several components in other applications.



# Wiremount Connector

## 3M™ Link Connector

.100" IDC, Wiremount, Hermaphroditic



.100" IDC, Wiremount, Hermaphroditic



These connectors do not require any special tooling or pre-treatment of cables, and can be terminated using a standard pair of pliers. Benefits of the Link Connector products include: a simple installation process that does not create material debris or waste; a labor saving IDC termination process relative to traditional interconnect alternatives; ease of assembly for system building; and a design that provides for consistent quality and reliability. Features include color-coded covers to allow for the proper wire usage, wire alignment and retention built into the cover all to allow for proper wire termination along with latches and polarization to allow for proper mating of the connectors.

### Specifications

<b>Material:</b>	Polyester (PBT) body, Nylon cover
<b>Flammability:</b>	UL 94V-0
<b>Wire Accomodation:</b>	18 AWG [0.75] Tinned stranded 20 AWG [0.50] Tinned stranded
<b>Current Rating:</b>	5.0 A
<b>Temperature Rating:</b>	-20 °C to +70 °C

### Fast Facts

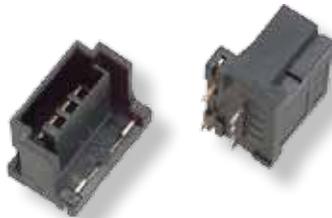
- CC-Link/LT Industrial Automation Field Network
- Hermaphroditic four-point contact mating structures reduces the number of components required to interconnect and ensures a reliable interconnect
- Easy, labor saving and reliable IDC termination
- T-Tap termination enables mid-cable terminations without special preparation or handling of the cable or wires in order to interconnect field bus and powerlines at any point
- Easy field termination with no special wire preparation – no stripping, tinning or special tooling; terminate wires with a common pliers
- Design accepts multiple wire diameters of 1.8 to 2.54 mm (0.071 to 0.100"), conductor sizes of 18 and 20 AWG (0.50 - 0.75 mm<sup>2</sup>), and discrete wire or flat ribbon cable on 2.54 mm (0.100") pitch
- 5 Amp maximum current carrying capability per contact with all 4 contacts operating
- Latching mechanism maintains a reliable interconnection in demanding field applications
- RoHS compliant

Available Products and Color Code Designation

Product Number	Cover Shape O.D. / Wire Type	Wire Size AWG / mm <sup>2</sup>	Marking / Shape	Color			Tech Sheet
				Body	Cover	Code	
38104-0018-000 FL	2.54 Flat Cable	18 / 0.75	3M	Black	Black	0	TS-2098
38104-E018-E00 FL	Discrete			Black	Orange	E	
38104-F018-F00 FL	Discrete			Black	Yellow	F	
38104-0020-100 FL	2.54 Flat Cable	20 / 0.50		Gray	Black	I	
38104-E020-G00 FL	Discrete			Gray	Orange	G	
38104-F020-H00 FL	Discrete			Gray	Yellow	H	
38104-M018-M0M FL	2.54 Flat Cable	18 / 0.75	CC-Link/LT	Blue	Blue	M	
38104-A018-A0M FL	Discrete			Blue	D. Green	A	
38104-B018-B0M FL	Discrete			Blue	L. Green	B	

**Cables for Wiremount Connectors**

Compatible cables for CC-Link applications				
3M Part Number	Description	Applicative Connector	Tech Sheet	
79100-075-4FLT	CC-Link/LT Flat Cable	38104-M018-M0M FL	TS-2322	
79100-075-4ZLT	CC-Link/LT Cable Flexible Type	38104-F018-F00 FL 38104-B018-B0M FL	TS-2325	
79100-075-4F1	4 Wires Flat Cable (Black/Red/White/Green)	38104-0018-000 FL	TS-2323	



Completions of the 3M Link Connector product portfolio are four variations of boardmount connectors that mates with nine different 3M Link Connectors, wiremount, hermaphroditic style. They are available as a right angle version as well as a straight version, in blue or black color. Specific board retention features provide additional mechanical stability for board thicknesses of 1mm and 1.6mm.

**Fast Facts**

- Mates with 3M™ Link Connector, Wiremount 38104
- Vertical or right angle configuration
- Accepts latch mechanism of Link Connector, Wiremount 38104
- Board retention feature for 1.0 mm and 1.6 mm thick boards
- Unshielded

Available Products and Color Code Designation				
Part Number	Style	Color	Marking	Tech Sheet
38204-52S3-000 PL	Right Angle	Black	3M	TS-2099
38204-52S3-M0M PL	Right Angle	Blue	CC-Link/LT	
38204-62S3-000 PL	Straight	Black	3M	
38204-62S3-M0M PL	Straight	Blue	CC-Link/LT	

**3M™ Link Connector**

.100" Boardmount, Straight and Right Angle



.100" Boardmount, Right Angle

**Specifications**

- Material:** Glass-filled Polyester (PBT)
- Flammability:** UL 94V-0
- Current Rating:** 5.0 A
- Temperature Ratings:** -20 °C to +70 °C

3M is a trademark of 3M Company.

**Important Notice**

Before using this product, you must evaluate it and determine if it is suitable for your intended application. You assume all risks and liability associated with such use.

**Warranty; Limited Remedy; Limited Liability.**

3M's product warranty is stated in its Product Literature available upon request. **3M MAKES NO OTHER WARRANTIES INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.** If this product is defective within the warranty period stated above, your exclusive remedy shall be, at 3M's option, to replace or repair the 3M product or refund the purchase price of the 3M product. **Except where prohibited by law, 3M will not be liable for any loss or damage arising from this 3M product, whether direct, indirect, special, incidental or consequential regardless of the legal theory asserted.**



**Electronic Solutions Division  
Interconnect Products**

6801 River Place Blvd.  
Austin, TX 78726-9000  
800-225-5373  
[www.3Mconnector.com](http://www.3Mconnector.com)

Please recycle. Printed in USA.  
© 3M 2009. All rights reserved.  
80-4000-1992-5