

CABLE DRAWING: **CAB-0XXX (SALEM CODE)**

DRAWING TITLE:  
**SBC A/C Control Cable**

DRAWING NO.: <b>MWACAB-0036</b>	DRAWN BY: <b>DRC</b>	DATE: 23-Dec-09	REV: <b>A</b>
		SHEET: 1 of 3	

**Cable Detail:**

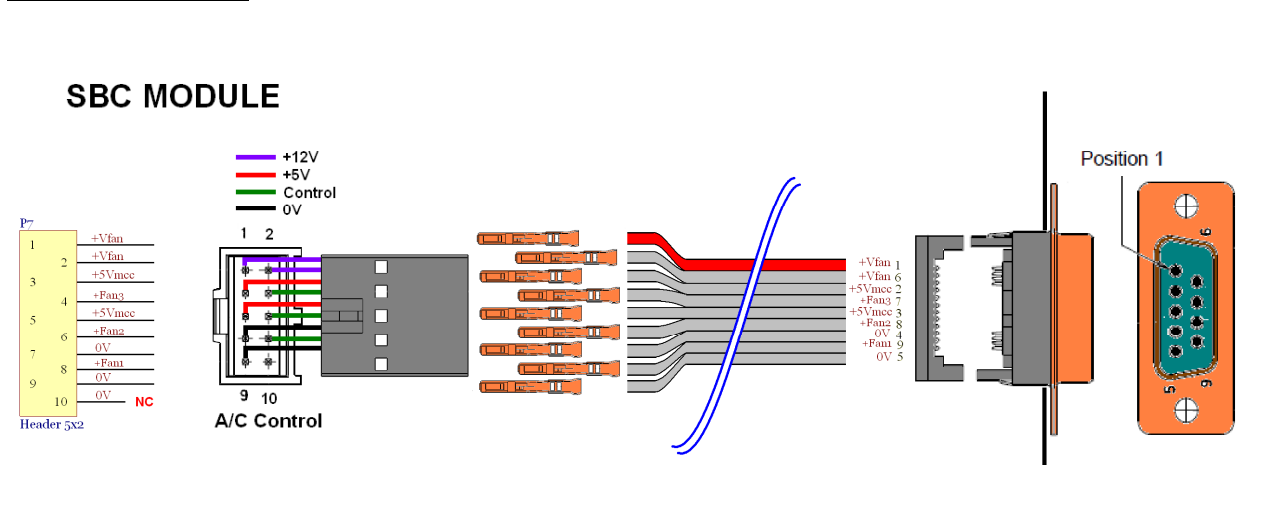
Connectors:	Description	Parts (Qty)
ATIM-C P7	10-Way Shell	See Note1 Below(1)
ATIM-C P7	Crimp Socket for above	See Note2 Below(9)
SBC FP	DE9 Female IDC	See Note3 Below(1)
Conductors:		
Cable	Ribbon Cable, Flat, 9Way	See Note4 Below(??)
Misc:		

Overall Length ??+/-5mm

**Notes:**

- 10-Way Shell can be supplied from Farnell #329-1583. Any equivalent will be OK refer to data sheets supplied with this drawing.
- Shell Sockets can be supplied from Farnell #973-3280. Any equivalent will be OK refer to data sheets supplied with this drawing.
- DE9 Female IDC connector can be supplied from Farnell #469-415. Any equivalent will be OK refer to data sheets supplied with this drawing.
- The ribbon cable can be supplied from RS# 363-626 or PSI Stock # PC-0004. Any equivalent will be OK refer to data sheets supplied with this drawing.

**Typical Drawing:**



**REVISION**

Date	Rev	Remarks
23/12/09	A	Draft



CABLE DRAWING: CAB-0XXX (SALEM CODE)

DRAWING TITLE: SBC A/C Control Cable

DRAWING NO.: MWACAB-0036	DRAWN BY: DRC	DATE: 23-Dec-09 SHEET: 2 of 3	REV: A
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**Pinouts Table:**

SBC FP AC Control		ATIM Control P7
Pins(9)		Pins(10)
1	+Vfan	1
6	+Vfan	2
2	+5Vmcc	3
7	+Fan3	4
3	+5Vmcc	5
8	+Fan2	6
4	0V	7
9	+Fan1	8
5	0V	9
nc	0V	10

**Connection Detail:**

From: (SBC) SBC Front Panel Connector  
 To: (SBC) ATIM-C P7 Connector

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		SHEET: 3 of 3	

**Assembly Details:**

**Wire Preparation**

The wire must be stripped to the dimension provided in Figure 2.

*Do not nick, scrape, or cut the wire conductor during the stripping operation.*

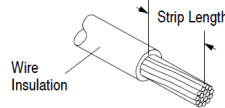


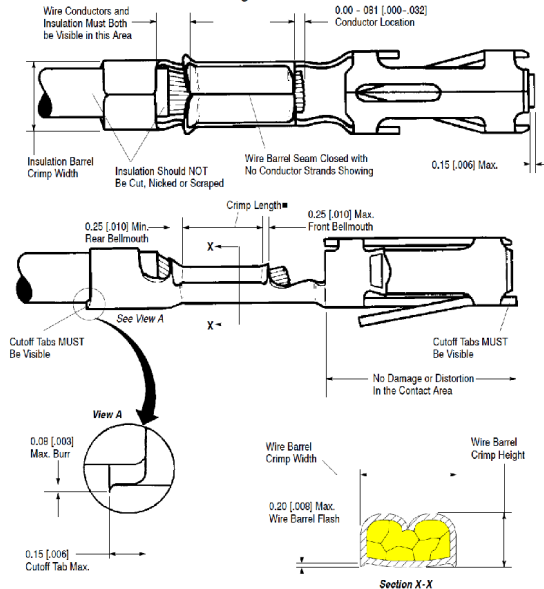
Figure 2

WIRE SIZE RANGE, (AWG)	INSUL DIA MAX.	STRIP LENGTH	WIRE BARREL		INSUL BARREL CRIMP WIDTH
			CRIMP HEIGHT	CRIMP WIDTH	
20	•	4.78-3.58	0.94-0.72	1.4	1.57
22	•	4.78-3.58	0.84-0.72		
24	•	4.78-3.58	0.83-0.64		
22	1.55	4.37-2.77	0.97-0.81	1.07	
24	1.55	4.37-2.77	0.86-0.71		
26	1.55	4.37-2.77	0.81-0.71		
26-30	1.22	4.37-2.77	0.74-0.64	1.4	1.4
27, 28	1.02	4.37-2.77	0.61-0.51	0.84	
30, 32	1.02	4.37-2.77	0.61-0.48		

**Crimp Length**

For optimum crimp effectiveness, the crimp must be within the area shown and must meet the crimp dimensions provided in Figure 3. Effective crimp length shall be defined as that portion of the wire barrel, excluding bellmouth(s), fully formed by the crimping tool.

Figure 3



**NOTE:** Comparing a crimped contact to an uncrimped contact should reveal any fault that may have occurred to front shoulder or locking lances during crimping.

Effective crimp length shall be 2.67 mm minimum for 20-24 AWG wire, and 2.16 mm minimum for all other wire sizes; and is defined as that portion of the wire barrel fully formed by the tool, excluding the bellmouths.

**REVISION**

Date	Rev	Remarks
23/12/09	A	Draft

# D Sub

## Socket Connector

8300 Series



57

- Available in either preassembled or two piece covers
- Available in either open or closed end cover
- Improved metal strain relief — hooks directly to metal shell
- Low profile
- Four mounting options

Date Modified: September 29, 1999

TS-0235-17  
Sheet 1 of 3

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## Physical

### Insulation

Material: Glass Filled Polyester (PBT)  
Flammability: UL 94V-0  
Color: Gray

### Contact

Material: Copper Alloy  
Plating  
Underplate: 100  $\mu$ " (1.27  $\mu$ m) Nickel — QQ-N-290, Class 2  
Wiping Area: 30  $\mu$ " (0.76  $\mu$ m) Gold — MIL-G-45204, Type II, Grade C

### Shell

Material: Steel  
Plating: Tin

**Strain Relief Material:** Stainless Steel .016 (0.40) Thick

**Wire Accommodation:** 26 & 28 AWG Solid or Stranded

**Marking:** 3M Logo & Contact Position Numbers

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## Electrical

**Current Rating:** 1 A

**Insulation Resistance:**  $> 1 \times 10^9 \Omega$  at 500 VDC

**Withstanding Voltage:** 1000 Vrms at Sea Level

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## Environmental

**Temperature Rating:**  $-55^\circ$  to  $+105^\circ$

UL File No.: E68080

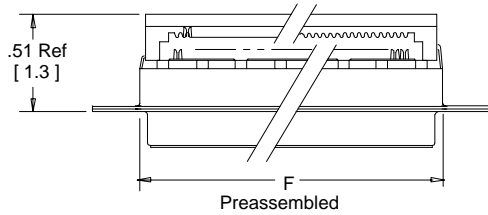
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### 3M Interconnect Solutions Division

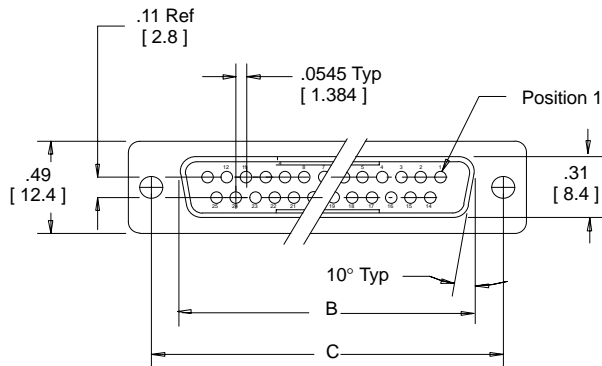
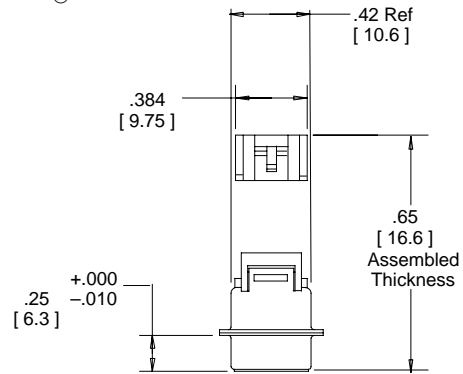
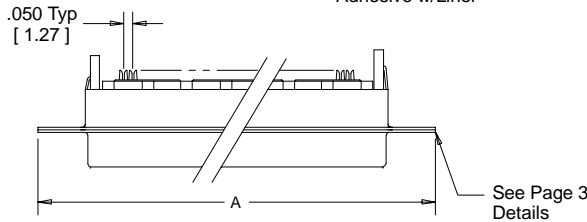
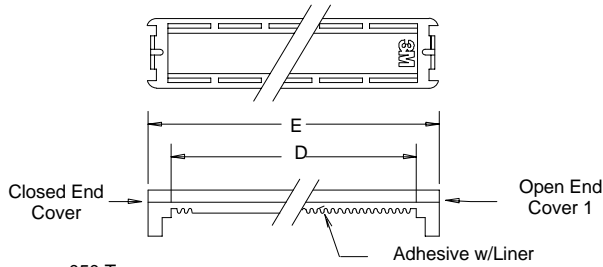
6801 River Place Blvd.  
Austin, TX 78726-9000

For technical, sales or ordering information call  
**800-225-5373**

Contact Quantity	Dimensions					
	A	B	C	D	E	F ± .008
09	1.23 [ 31.2 ]	.64 [ 16.3 ]	.98 [ 24.9 ]	.46 [ 11.7 ]	.67 [ 17.0 ]	.70 [ 17.7 ]
15	1.56 [ 39.6 ]	.97 [ 25.6 ]	1.31 [ 33.3 ]	.76 [ 19.3 ]	.99 [ 25.2 ]	1.03 [ 26.2 ]
25	2.10 [ 53.3 ]	1.51 [ 38.4 ]	1.85 [ 47.0 ]	1.27 [ 32.3 ]	1.54 [ 39.1 ]	1.57 [ 39.9 ]
37	2.74 [ 69.6 ]	2.16 [ 54.9 ]	2.50 [ 63.5 ]	1.87 [ 47.5 ]	2.19 [ 55.6 ]	2.22 [ 56.4 ]



Note: Preassembled closed cover on Pin 1 side of connector.



Inch  
[mm]

Tolerance Unless Noted			
	.0	.00	.000
Inch	± .1	± .01	± .005

[ ] Dimensions for Reference only

### Ordering Information

#### Connector 83XX-X00X

Contact Quantity

Cover Style:  
6 = Open Cover  
7 = Closed Cover  
8 = Open Cover, w/o Adhesive, Preassembled  
9 = Closed Cover, w/o Adhesive, Preassembled

Mounting Style:  
0 = ∅ .120 [ 3.05 ]  
3 = 4-40 UNC  
4 = M3

#### Strain Relief (Order Separately) 3448-8DXXA

09 = 9 Position  
15 = 15 Position  
25 = 25 Position  
37 = 37 Position

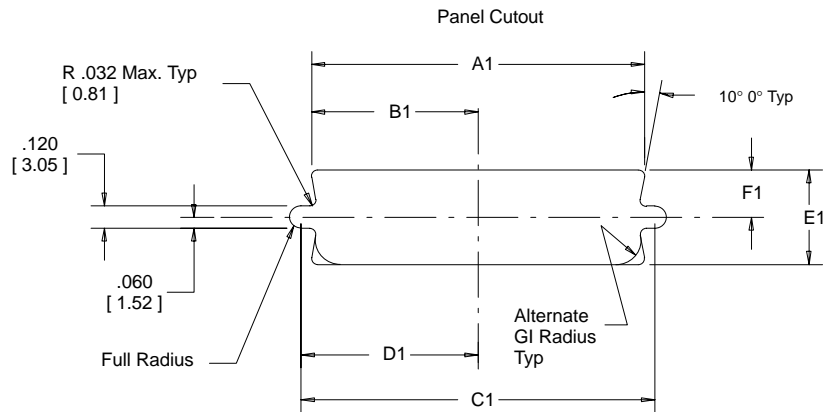
TS-0235-17  
Sheet 2 of 3

# D Sub Socket Connector

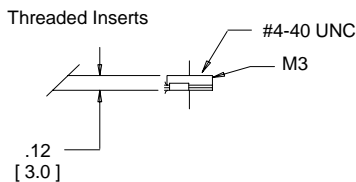
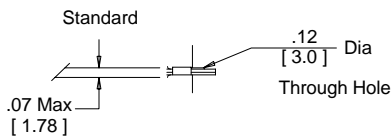
8300 Series

Mounting Method*	Contact Quantity	Dimensions						
		A1	B1	C1	D1	E1	F1	G1
Front	9	.87 [ 22.0 ]	.44 [ 11.2 ]	.98 [ 24.9 ]	.49 [ 12.5 ]	.51 [ 13.0 ]	.26 [ 6.6 ]	.12 [ 3.1 ]
	15	1.20 [ 30.5 ]	.60 [ 15.2 ]	1.31 [ 33.3 ]	.66 [ 16.8 ]			
	25	1.74 [ 44.2 ]	.87 [ 22.1 ]	1.85 [ 47.0 ]	.93 [ 23.6 ]			
	37	2.39 [ 60.7 ]	1.20 [ 30.5 ]	2.50 [ 63.5 ]	1.25 [ 31.8 ]			
Rear	9	0.81 [ 20.6 ]	.40 [ 10.2 ]	.98 [ 25.0 ]	.49 [ 12.5 ]	0.45 [ 11.4 ]	0.22 [ 5.8 ]	.12 [ 3.1 ]
	15	1.13 [ 28.7 ]	.57 [ 14.5 ]	1.31 [ 33.3 ]	.66 [ 16.8 ]			
	25	1.67 [ 42.4 ]	.84 [ 21.3 ]	1.85 [ 47.0 ]	.93 [ 23.6 ]			
	37	2.33 [ 59.2 ]	1.16 [ 29.5 ]	2.50 [ 63.5 ]	1.25 [ 31.8 ]			

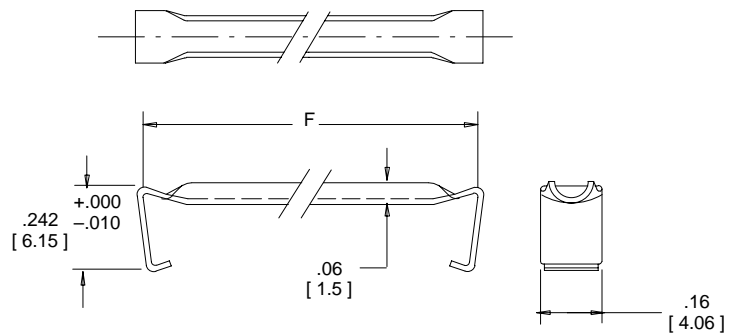
\* Front Mount—The connector is mounted in front of the panel.  
Rear Mount—The connector is mounted behind the panel.



### Mounting Styles



### Strain Relief (Order Separately or with Connector)



TS-0235-17  
Sheet 3 of 3

## 3M Interconnect Solutions Division

6801 River Place Blvd.  
Austin, TX 78726-9000

For technical, sales or ordering information call  
**800-225-5373**

**FEATURES AND SPECIFICATIONS**

**Features and Benefits**

- Sizes 6 to 64 circuits
- Polarized
- Friction lock

**Reference Information**

Product Specification: PS-99020-0001  
 Packaging: Bag  
 Mates With: 90122, 90130 and 90131  
 Use With: 90119  
 Designed In: Inches

**Electrical**

Voltage: 350V  
 Current: 3.0A max.  
 Contact Resistance: 20mΩ max.  
 Insulation Resistance: 1000 MΩ min.

**Mechanical**

Contact Retention to Housing: 15N min.  
 Normal Force: 1N

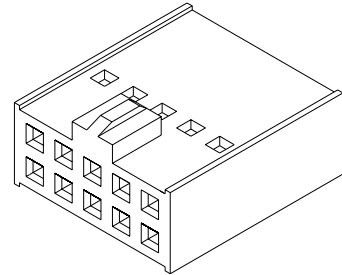
**Physical**

Housing: Black polyphenylene oxide, UL 94V-1  
 Operating Temperature: -55 to +105°C



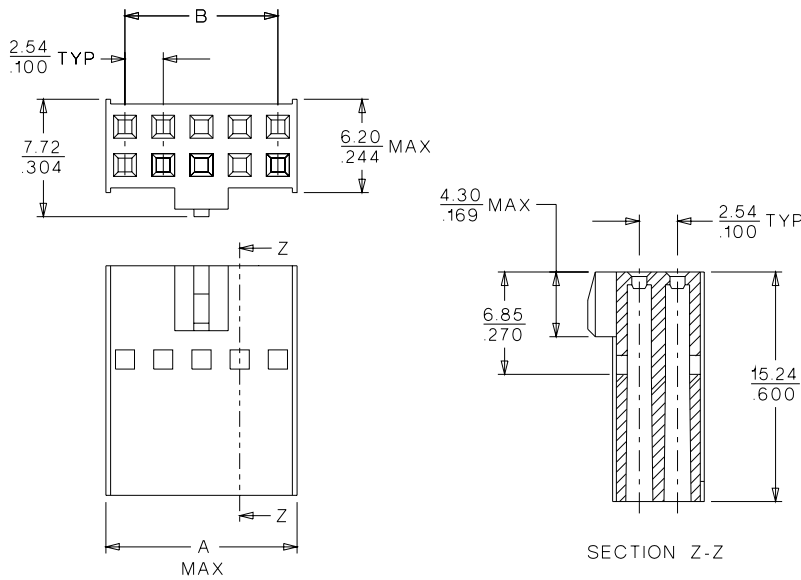
**2.54mm (.100") Pitch  
 C-Grid III™  
 Crimp Connector Housing**

**90142  
 Dual Row**



**CATALOG DRAWING (FOR REFERENCE ONLY)**

*Not For Use With Molex SL™ Components*



Delivered on a carrier with 20 pieces per strip.  
**Actual Size** **Universal Polarizing Pin 40713-1**  
 Order No. 15-04-0292

**ORDERING INFORMATION AND DIMENSIONS**

Circuits	Order No.	Dimension	
		A	B
6	90142-0006	7.77 (.306)	5.08 (.200)
8	90142-0008	10.31 (.406)	7.62 (.300)
10	90142-0010	12.85 (.506)	10.16 (.400)
12	90142-0012	15.39 (.606)	12.70 (.500)
14	90142-0014	17.93 (.706)	15.24 (.600)
16	90142-0016	20.47 (.806)	17.78 (.700)
18	90142-0018	23.01 (.906)	20.32 (.800)
20	90142-0020	25.55 (1.006)	22.86 (.900)
22	90142-0022	28.09 (1.106)	25.55 (1.006)
24	90142-0024	30.63 (1.206)	27.94 (1.100)
26	90142-0026	33.17 (1.306)	30.48 (1.200)

Circuits	Order No.	Dimension	
		A	B
30	90142-0030	38.25 (1.506)	35.56 (1.400)
34	90142-0034	43.33 (1.706)	40.64 (1.600)
36	90142-0036	45.87 (1.806)	43.18 (1.700)
38	90142-0038	48.41 (1.906)	45.72 (1.800)
40	90142-0040	50.95 (2.006)	48.26 (1.900)
44	90142-0044	56.03 (2.206)	53.34 (2.100)
50	90142-0050	63.65 (2.506)	60.96 (2.400)
54	90142-0054	68.73 (2.706)	66.06 (2.600)
60	90142-0060	76.35 (3.006)	73.66 (2.900)
64	90142-0064	81.43 (3.206)	78.74 (3.100)
68	90142-0068	86.51 (3.406)	83.82 (3.300)

For other available circuit sizes contact Molex

## FEATURES AND SPECIFICATIONS

### Features and Benefits

- Fully enclosed contact box
- Contact and plating orientation according to DIN 41651
- North/south contact orientation avoids overstress

### Reference Information

Product Specification: PS-99020-0001  
 Packaging: Chain or bag  
 Mates With: 0.64mm (.025") square pins  
 Use With: 90123, 90142, 90143, 90156 and 90160  
 Designed In: Inches

### Electrical

Voltage: 350V  
 Current: 3.0A  
 Contact Resistance: 20mΩ max.

### Mechanical

Contact Retention to Housing: 15N (1.5kgf)  
 Normal Force: 1N

### Physical

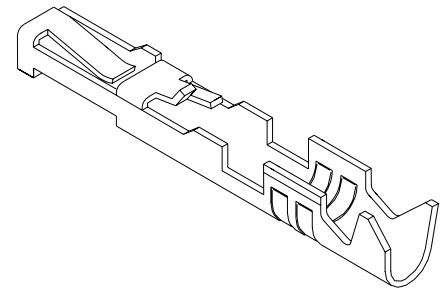
Contact: Copper Alloy  
 Plating: See Table  
 Wire Range: 22 to 24 and 26 to 28 AWG  
 Wire Insulation Diameter: 1.70mm (.067") max.



# 2.54mm (.100") Pitch C-Grid III™ Terminal

## 90119

## Female Crimp

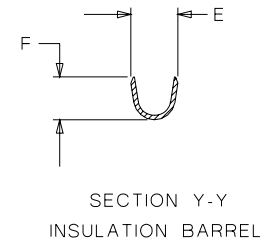
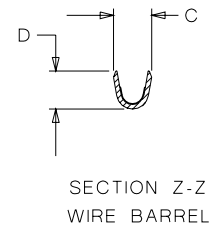
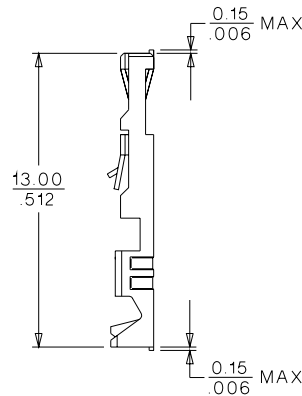
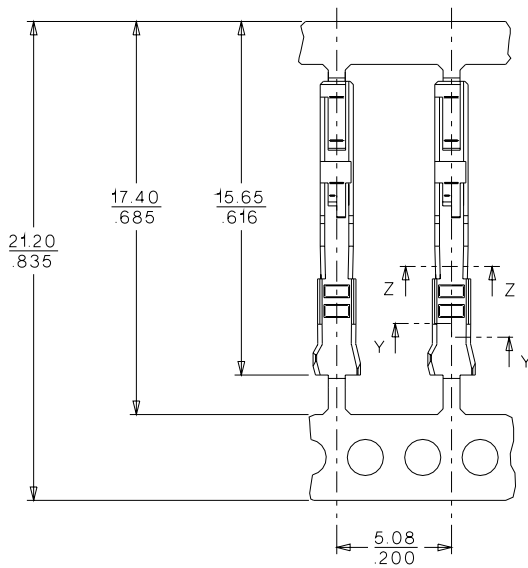


C

2.54mm (.100") Pitch

## CATALOG DRAWING (FOR REFERENCE ONLY)

Not For Use With Molex SL™ Components



## ORDERING INFORMATION AND DIMENSIONS

Order No.	Plating Option	Form	Wire Size (AWG)	Insulation Diameter Range	Dimension			
					C	D	E	F
• 90119-0109	A	Chain—Left Hand Feed	22-24	1.02/1.47 (.040/.058)	1.70 (.067)	1.70 (.067)	2.10 (.083)	1.90 (.075)
• 90119-0110	E							
• 90119-0111	F							
• 90119-0120	A		26-28	0.76/1.22 (.030/.048)	1.37 (.054)	1.37 (.054)	2.00 (.079)	1.70 (.067)
• 90119-0121	E							
• 90119-0122	F							
90119-2109	A	Bag	22-24	1.02/1.47 (.040/.058)	1.70 (.067)	1.70 (.067)	2.10 (.083)	1.90 (.075)
90119-2110	E							
90119-2111	F							
90119-2120	A		26-28	0.76/1.22 (.030/.048)	1.37 (.054)	1.37 (.054)	2.00 (.079)	1.70 (.067)
90119-2121	E							
90119-2122	F							

• Molex European standard product, usually available within shorter lead times

For other available versions contact Molex

Plating A: 1.00μm (39μ") min. Hot Tin dip

Plating E: 0.38μm (15μ") selective Gold over Nickel and 4μm (160μ") Tin/Lead over Nickel

Plating F: 0.76μm (30μ") selective Gold over Nickel and 4μm (160μ") Tin/Lead over Nickel

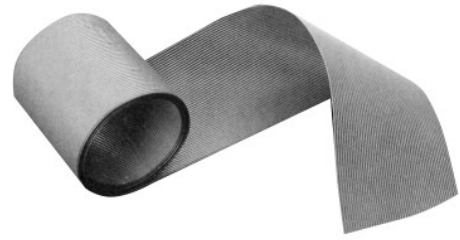


### .050" PITCH FLAT CABLE

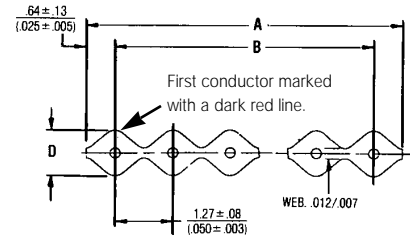
**SERIES 171 – 28 AWG (7/36) STRANDED**

**SERIES 173 – 28 AWG SOLID**

**SERIES 179 – 26 AWG (7/34) STRANDED**



CATALOG SERIES	SPECIFICATIONS						
	171		173		179		
Wire Size AWG	28 Stranded		28 Solid		26 Stranded		
Insulation Material	PVC		PVC		PVC		
Conductor Spacing mm (in)	1.27 (.050)		1.27 (.050)		1.27 (.050)		
Temperature Rating (°C)	105		105		105		
Voltage Rating (RMS)	300		300		300		
Impedance Ohms	100		105		93		
Capacitance pF/M (pF/FT)	46 (14)		44.3 (13.5)		49.5 (15.1)		
Inductance μH/M (μH/FT)	.46 (.14)		.49 (.15)		.43 (.13)		
Velocity of Propagation nS/M (nS/FT)	4.53 (1.38)		4.53 (1.38)		4.43 (1.35)		
Insulation Resistance Ohms/Ft	10 <sup>10</sup>		10 <sup>10</sup>		10 <sup>10</sup>		
Typical Crosstalk Characteristics	Rise Time nSec	3.0	7.0	3.0	7.0	3.0	7.0
	Near End (%)	5.0	3.2	4.8	3.1	5.2	3.8
10FT Sample 1 line driven	Far End (%)	6.7	2.7	7.3	2.9	6.1	2.3
	UL Style No.	2651		2651		2651	



Accumulation of pitch tolerance between conductors in entire cable may not exceed tolerance of dim. "B".

CABLE SERIES	DIMENSIONS IN MM (INCHES)	
	D	
171	.91 (.036)	
173	.91 (.036)	
179	1.02 (.040)	

#### Ordering Information

28 GAUGE STRANDED	CATALOG NUMBERS		26 GAUGE SOLID	NO. OF POS.	DIMENSIONS IN MM (INCHES)		
	28 GAUGE SOLID				A	B	B TOLERANCE
171-10ED	173-10	—	—	10	12.70 (.500)	11.43 (.450)	± .18 (±.007)
171-12	—	—	—	12	15.24 (.600)	13.97 (.550)	
171-14	173-14	179-14	—	14	17.78 (.700)	16.51 (.650)	
171-15	173-15	—	—	15	19.05 (.750)	17.78 (.700)	± .25 (±.010)
171-16	173-16	—	—	16	20.32 (.800)	19.05 (.750)	
171-20	173-20	—	—	20	25.40 (1.000)	24.13 (.950)	
171-24ED	173-24	179-24	—	24	30.48 (1.200)	29.21 (1.150)	
171-25	173-25	—	—	25	31.75 (1.250)	30.48 (1.200)	
171-26	173-26	—	—	26	33.02 (1.300)	31.75 (1.250)	
171-28	—	—	—	28	35.56 (1.400)	34.29 (1.350)	± .38 (±.015)
171-30ED	—	—	—	30	38.10 (1.500)	36.83 (1.450)	
171-34	173-34	—	—	34	43.18 (1.700)	41.91 (1.650)	
171-36	—	179-36	—	36	45.72 (1.800)	44.45 (1.750)	
171-37	173-37	—	—	37	46.99 (1.850)	45.72 (1.800)	
171-40ED	173-40	—	—	40	50.80 (2.000)	49.53 (1.950)	
171-44	173-44	—	—	44	55.88 (2.200)	54.61 (2.150)	
171-50	173-50	179-50	—	50	63.50 (2.500)	62.23 (2.450)	± .38 (±.015)
171-56	173-56	—	—	56	71.12 (2.800)	69.85 (2.750)	
171-60	173-60	—	—	60	76.20 (3.000)	74.93 (2.950)	
171-64	—	—	—	64	81.28 (3.200)	80.01 (3.150)	