Amphenol

Rectangular Attached Multi-Pin Industrial Cable Assemblies

R-146

Amphenol

Amphenol Corp. México
Prolongación Reforma 61-6B2
Col. Paseo de las Lomas
México, D.F. 01330 México
Tel +52 (55) 5258-9984
Fax +52 (55) 5081-6890
info@amphenolmexico.com

Advantage™* vs. the R-Line®

Molded Advantage™ Series

* Patents pending

- Low Cost
- UL & CSA Listed as an Assembly
- CE & VDE Pending
- Fully Intermateable with Existing General Motors NCCC-3 & DIN43652 Product
- Cosmetically Appealing
- Uni-Directional Strain Relief
- Mated Connector Rated to IP65
- Mated Connector Rated to NEMA 4 & 12
- Electroless Nickel Finish
- Two Stage Molded
- Tamper Proof
- Complete Environmental Sealing
- Relieves Stress on Conductors
- Eliminates Contact Push-Outs, Broken/Cracked Shells and Broken Latch Pins
- Superior Chemical Resistance
- Stocked in Standard Lengths
- Quick Delivery for Non-Standard Lengths
- Durable Die-Cast Aluminum Inner Shell
- Fewer Components
- Latching Rib - Proven Stronger
- Field Repair Kits Available

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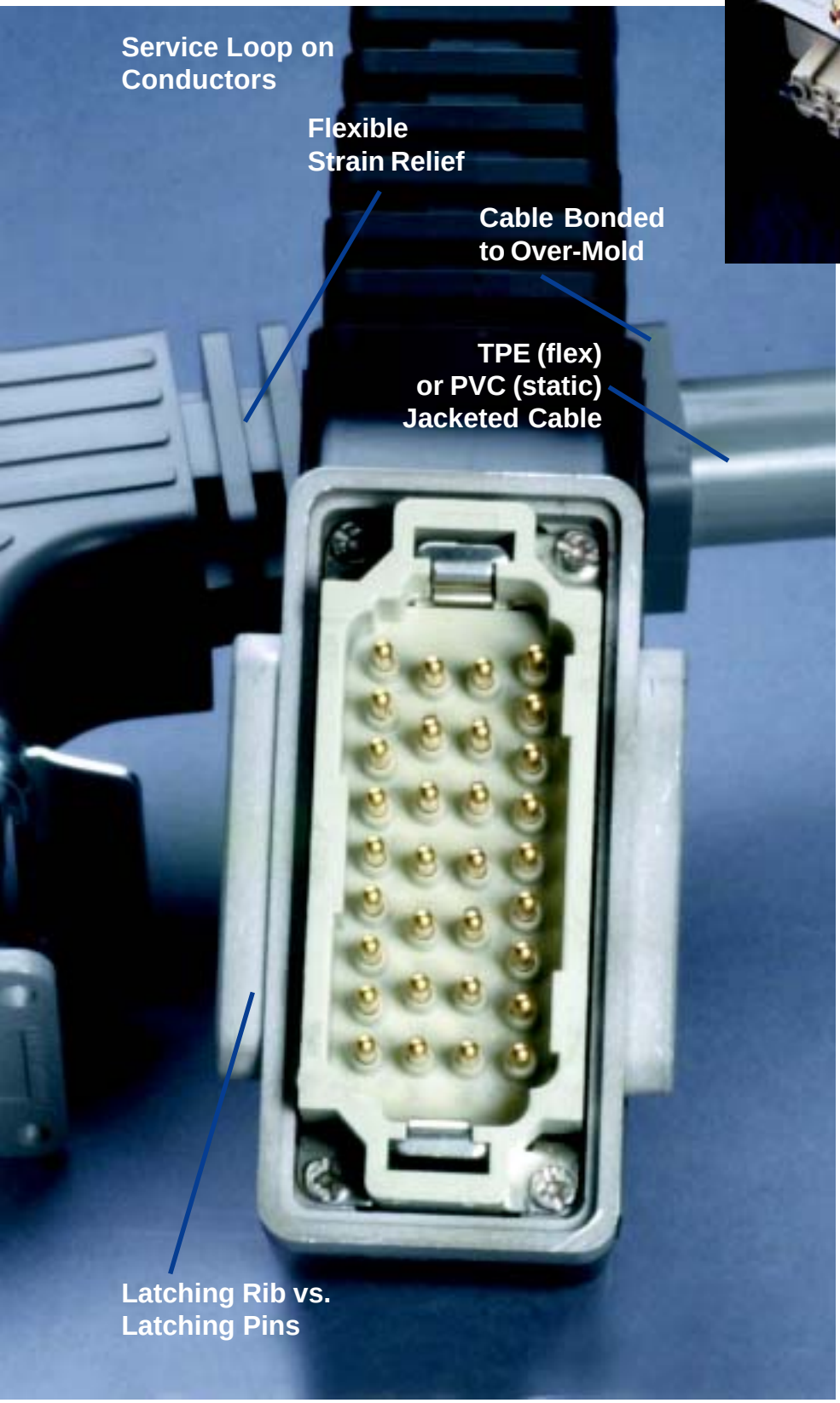
Prol. Reforma 61-6B2 México, D.F. 01330 México Tel. +52 (55) 5258-9984



Mechanical R-Line® Series

- Available as Kits or Assemblies
- Heavy Die Cast Housings
- Allows Power and Control in the Same Housing
- Top or Side Entry Designs
- Positive Locking Latches
- Rapid Mating Functions for the Plug and Receptacle
- Offers a Stainless Steel Basketweave to Control Strain Relief, Bend Radi & Cable Pull-Out
- 20 Standard Insert Configurations Accommodated by Seven Sizes of Connector Housings.
- Inserts Available for Crimp or Screw Type Termination
- Complete Environmental Sealing
- UL & CSA Approved

Product Ordering Guide

(1)	(2)	(3)				(4)	(5)	(Coding)
R	E	3	2		-	3	B	
R-Line	Insert Type	Insert Conf.				Plug/Recept. Connector	Backend Hardware	Coding

1) R-Line

2) Insert Type (Refer to pages 6)
- (D) RD Series
- (P) RP Series
- (C) RC Series
- (S) RS Series
- (E) RE Series

3) Insert Configuration (Refer to page 6)

(OPTIONAL) Leave Blank for Silver or (G) for Gold

4) Plug
(3) Male
(4) Female

Mountable Side Entry
(5) Male
(6) Female

In-Line Receptacle
(7) Male
(8) Female

5) Connector Backend Hardware
- (A) Molded Top Entry
- (B) Molded Side Entry
- (K) Top Entry Cable Adapter w/ Basketweave
- (T) Top Entry Cable Adapter
- (S) Side Entry Cable Adapter
- (Y) Side Entry Cable Adapter w/ Basketweave

(CODING) Leave Blank for Standard Assemblies

For Coded Assemblies (Refer to page 13)

(6)	(7)	(Coding)	(8)		(9)			(10)
4	B		8	J	1	6	-	E50
Cord Grip	Wire Mark.	Coding	Cable Type		Wire Awg.			Length

4) Plug
(3) Male
(4) Female

Mountable Side Entry
(5) Male
(6) Female

In-Line Receptacle
(7) Male
(8) Female

5) Connector Backend Hardware
- (A) Molded Top Entry
- (B) Molded Side Entry
- (K) Top Entry Cable Adapter w/ Basketweave
- (T) Top Entry Cable Adapter
- (S) Side Entry Cable Adapter
- (Y) Side Entry Cable Adapter w/ Basketweave

(OPTIONAL) See Diagram

Leave Blank for Standard Assemblies

For Coded Assemblies (Refer to page 13)

8) Cable Type (Refer to page 14)
- MR - Red, Cond. Continuous Flex
- MF - Blue, Cond. Continuous Flex
- 8J - Red, Cond. Stationary Tray Cable
- 8F - Blue, Cond. Stationary Tray Cable

9) Wire AWG

(16)

Other AWG Available - Please Consult Factory

10) Length Substitute Letter Plus Length (E15=15 feet)
- (E) Feet
- (H) Inches
- (M) Meters
- (P) To Print (Use (P) Plus Print Number)

(1)	(2)	(3)				(4)	(5)
R	E	3	2		-	1	P
R-Line	Insert Type	Insert Conf.				Plug/Recept. Connector	Backend Hardware

1)
R-Line

2)
Insert Type
(Refer to page 6)
(D) RD Series
(P) RP Series
(C) RC Series
(S) RS Series
(E) RE Series
(T) RT Series

3)
Insert Configuration
(Refer to page 6)

(OPTIONAL)
Leave Blank for Silver or (G) for Gold

4)
Panel Mount Receptacle
(1) Male
(2) Female

5)
(P) Panel Mount

(6)	(7)	(Coding)	(8)		(9)		(10)	(11)
0	1		1	8	1	6	COLOR PIGTAIL ASSEMBLIES ONLY	E50
	Wire Mark.	Coding	Wire Type		Wire Awg.			Length

6)
N/A

7)
Wire Marketing
(3) Pigtail w/ Tie-Wrap Every 12" Wire marked 1 or A thru
(4) Pigtail w/ Tie-Wrap Every 12" Wire marked To Print

(OPTIONAL)
See Diagram
Leave balnk for Standard Assemblies
For Coded Assemblies (Refer to page 13)

8)
(7) Single Conductor, Stranded, PVC Insulation UL1007, 30 thru 16 AWG
(9) Single Conductor, 2-64 PVC Insulation UL Style MTW 600V-90°C, 18 thru 02 AWG
(18) Single Conductor Stranded, PVC Insulation UL 1017, 18 thru 10 AWG

9)
Wire AWG
(16)
Other AWG Available - Please Consult Factory

10)
Color Pigtail Assemblies Only
(A) Brown
(B) Black
(C) Orange
(E) Green
(F) Blue
(G) Grey
(M) Mixed
(R) Red
(V) Violet
(W) White

11)
Length Substitute Letter Plus Length (E15=15 feet)
(E) Feet
(H) Inches
(M) Meters
(P) To Print (Use (P) Plus Print Number)

Product Ordering Guide

*Not Available in Molded Version

(1)	(2)	(3)				(4)	(5)	(Coding)			(6)
R	E	3	2		-	3	K	0	0	-	A6
R-Line	Insert Type	Insert Conf.				Plug/Recept. Connector	Backend Hardware	Connector Kit			Entry Size

1) R-Line

2) Insert Type (Refer to page 6)

(D) RD Series

(P) RP Series

(C) RC Series

(S) RS Series

(E) RE Series

(T) RT Series

3) Insert Configuration (Refer to page 6)

(OPTIONAL) Leave Blank for Silver or (G) for Gold

4) Panel Mount Receptacle
(1) Male
(2) Female

Plug
(3) Male
(4) Female

Mountable Side Entry
(5) Male
(6) Female

In-Line Receptacle
(7) Male
(8) Female

5) Connector Backend Hardware

(K) Top Entry Cable Adapter w/ Basketweave

(P) Panel Mount

(T) Top Entry Cable Adapter

(S) Side Entry Cable Adapter

(Y) Side Entry Cable Adapter w/ Basketweave

(CODING) See Diagram on page 13

(0) None or 1, 2, 3, 4, 5, 6, as in diagram

6) Entry Size

	MIN.	MAX.	NPT Size For Threaded Adapters	Entry Size	
	.062	.125	1/8”	A1	INCHES
	.125	.250	1/4”	A2	
	.250	.375	3/8”	A3	
	.375	.500	1/2”	A4	
	.500	.625		A5	
	.625	.750	3/4”	A6	
	.750	.875		A7	
	.875	1.000	1”	A8	
	1.000	1.125		B1	
	1.125	1.250	1-1/4”	B2	
	7.5mm	12.5mm		PG11	METRIC
	8mm	15.5mm		PG13.5	
	7.5mm	15mm		PG16	
	11mm	23mm		PG21	
	19mm	31mm		PG29	
	16.5mm	33mm		PG36	

Molded Advantage™ Series

Mechanical R-Line® Series

NOTE: Omit the entry size selection’s last two digits from the part number when ordering a panel mount receptacle.

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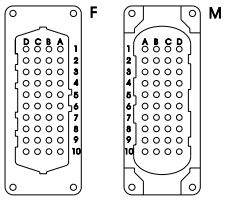
Prol. Reforma 61-6B2 México, D.F. 01330 México Tel. +52 (55) 5258-9984

Insert Configuration

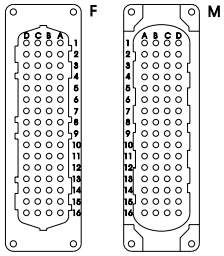
NOTE: Other inserts are available.
Please consult factory for additional information.

RD Series - Crimp Termination

14 awg - 20 awg / 10A - 300V



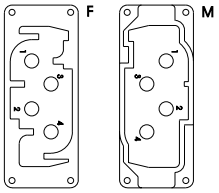
40 Contact
Shell Size 16



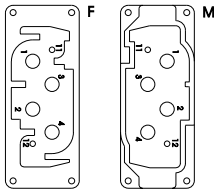
64 Contact
Shell Size 24

RP Series - Screw Termination

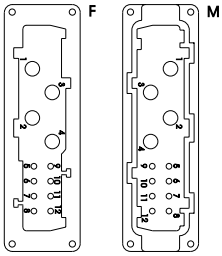
4 awg - 12 awg / 80A - 690V / 16A - 400V



4 Contact
Shell Size 16



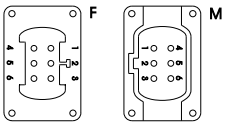
4 Contact + 2
Shell Size 16



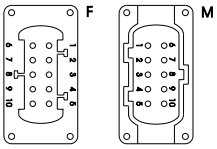
4 Contact + 8
Shell Size 24

RC/RS Series - Crimp/Screw Termination RT Series - Terminal Block Termination

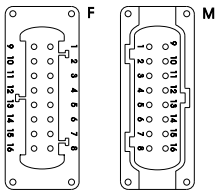
12 awg - 20 awg / 16A - 400V / Polution degree 3(C)



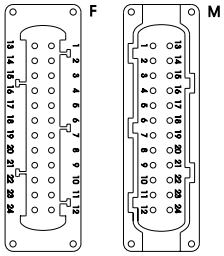
6 Contact
Shell Size 06



10 Contact
Shell Size 10



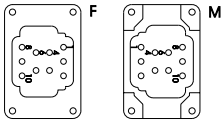
16 Contact
Shell Size 16



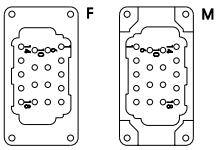
24 Contact
Shell Size 24

RE Series - Crimp Termination

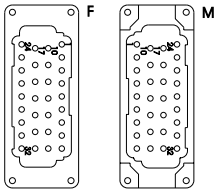
12 awg - 20 awg / 16A - 500V / Polution degree 3(C)



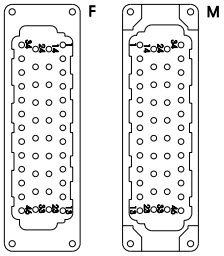
10 Contact
Shell Size 06



18 Contact
Shell Size 10

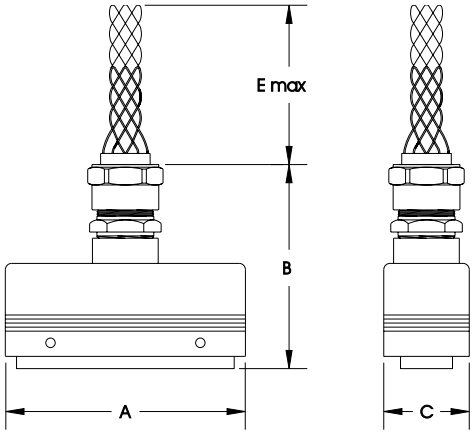


32 Contact
Shell Size 16



46 Contact
Shell Size 24

Dimensional Information



Pin Socket

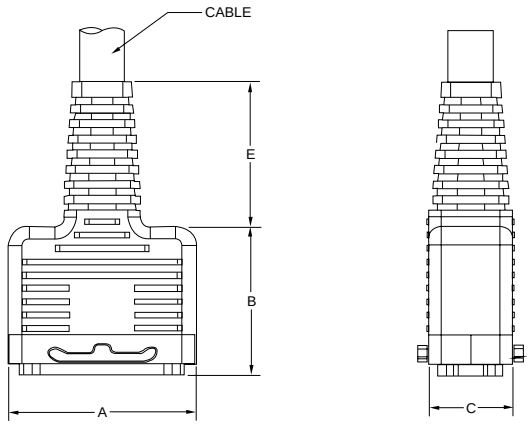
3K00 / 4K00 Top Entry w/Basketweave

3T00 / 4T00 Top Entry w/o Basketweave

3M00/4M00 Top Entry w/Cable Clamp

F= Maximum Cable O.D. for Standard Shell

Shell Size	A	B	C	D	E	F
06	2.36 (60.0)	5.46 (138.7)	1.69 (43.0)	N/A	10.13 (257.2)	1.00 (25.4)
10	2.87 (73.0)	5.46 (138.7)	1.69 (43.0)	N/A	10.13 (257.2)	1.00 (25.4)
16	3.68 (93.5)	5.70 (144.8)	1.69 (43.0)	N/A	10.13 (257.2)	1.00 (25.4)
24	4.72 (120.0)	5.70 (144.8)	1.69 (43.0)	N/A	10.13 (257.2)	1.00 (25.4)



Pin Socket

3A00/4A00 Top Entry Molded

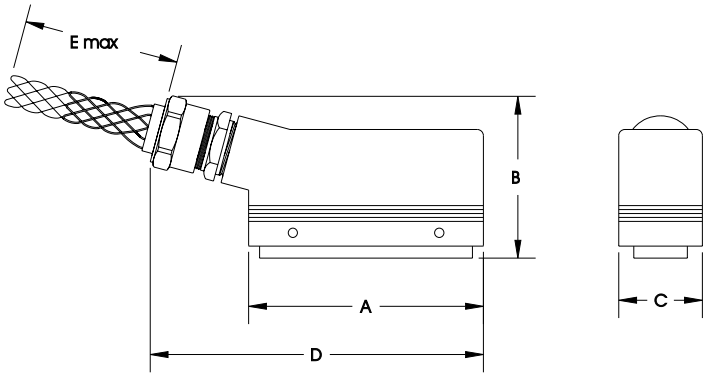
Shell Size	A	B	C	D	E
06	2.45 (62.3)	3.06 (77.8)	1.69 (42.9)	N/A	2.44 (62.0)
10	2.70 (68.6)	3.27 (83.1)	1.69 (42.9)	N/A	2.44 (62.0)
16	3.77 (95.8)	3.42 (86.9)	1.69 (42.9)	N/A	2.66 (67.5)
24	4.81 (122.2)	3.84 (97.6)	1.69 (42.9)	N/A	2.66 (67.5)

NOTES:

1) Insert configuration determines connector shell size. Refer to page 6

2) All dimensions shown are for overall clearance purposes. They are not necessarily true component dimensions. All metric dimension conversions are rounded.

3) Dimensions: Inches (mm)



Pin Socket

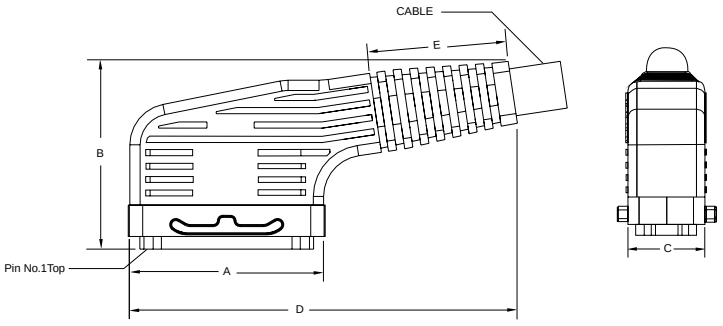
F= Maximum Cable O.D. for Standard Shell

3S00/4S00 **Side Entry w/o Basketweave**

3Y00/4Y00 **Side Entry w/Basketweave**

3Z00/4Z00 **Side Entry w/Cable Clamp**

Shell Size	A	B	C	D	E	F
06	2.36 (60.0)	2.99 (79.9)	1.69 (43.0)	4.76 (120.9)	10.13 (257.2)	1.00 (25.4)
10	2.87 (73.0)	2.99 (79.9)	1.69 (43.0)	5.28 (134.1)	10.13 (257.2)	1.00 (25.4)
16	3.68 (93.5)	3.23 (82.6)	1.69 (43.0)	6.08 (154.4)	10.13 (257.2)	1.00 (25.4)
24	4.72 (120.0)	3.23 (82.6)	1.69 (43.0)	7.13 (181.1)	10.13 (257.2)	1.00 (25.4)

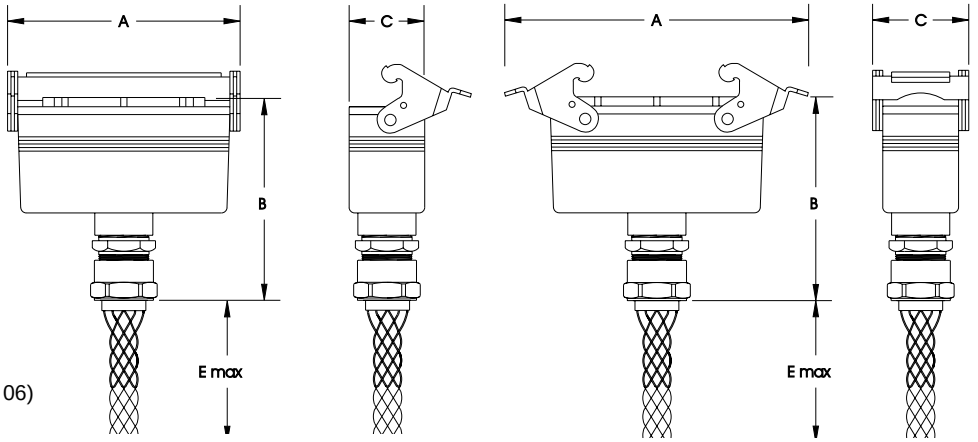


Pin Socket

3B00/4B00 **Side Entry Molded**

Shell Size	A	B	C	D	E
06	2.45 (62.2)	3.08 (78.2)	1.69 (42.9)	5.50 (139.7)	2.44 (61.9)
10	2.70 (68.6)	3.08 (78.2)	1.69 (42.9)	6.00 (152.4)	2.44 (61.9)
16	3.77 (95.8)	3.59 (91.3)	1.69 (42.9)	7.50 (190.5)	2.66 (67.5)
24	4.81 (122.2)	3.71 (94.3)	1.69 (42.9)	8.50 (215.9)	2.66 (67.5)

Dimensional Information



Single Latch -
(On Shell Size 06)

Double Latch -
(On Shell Sizes
10, 16 & 24)

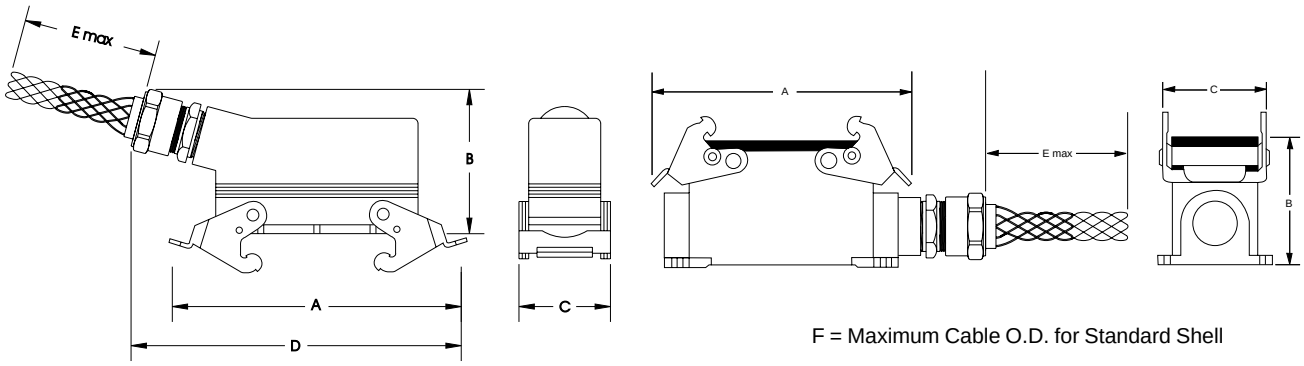
F = Maximum Cable O.D. for Standard Shell

Pin Socket

7K00/8K00 In-Line Top Entry w/Basketweave

7T00/8T00 In-Line Top Entry w/o Basketweave

Shell Size	A	B	C	D	E	F
06	2.99 (76.0)	5.68 (144.2)	1.69 (43.0)	N/A	10.13 (257.2)	1.00 (25.4)
10	5.32 (135.0)	5.68 (144.2)	2.32 (59.0)	N/A	10.13 (257.2)	1.00 (25.4)
16	6.03 (153.0)	5.91 (150.2)	2.32 (59.0)	N/A	10.13 (257.2)	1.00 (25.4)
24	7.05 (179.5)	5.91 (150.2)	2.32 (59.0)	N/A	10.13 (257.2)	1.00 (25.4)



F = Maximum Cable O.D. for Standard Shell

Pin Socket

7Y00/8Y00 In-Line Side Entry w/Basketweave

5S00/6S00 Flush Mount In-Line Top Entry w/Basketweave

Shell Size	A	B	C	D	E	F
10	5.13 (135.0)	2.99 (79.9)	2.32 (59.0)	5.28 (134.1)	10.13 (257.2)	1.00 (25.4)
16	6.02 (153.0)	3.23 (82.6)	2.32 (59.0)	6.08 (154.4)	10.13 (257.2)	1.00 (25.4)
24	7.05 (179.5)	3.23 (82.6)	2.32 (59.0)	7.13 (181.1)	N/A	N/A

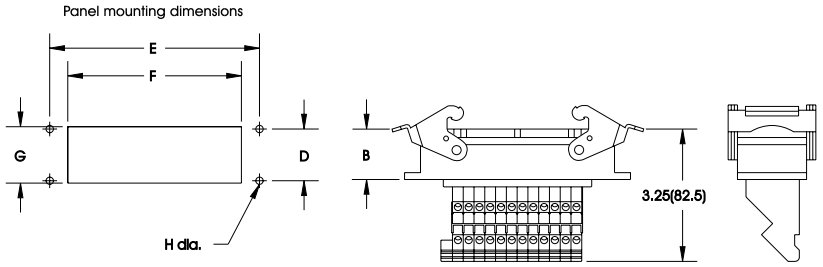
NOTES:

1) Insert configuration determines connector shell size. Refer to page 6

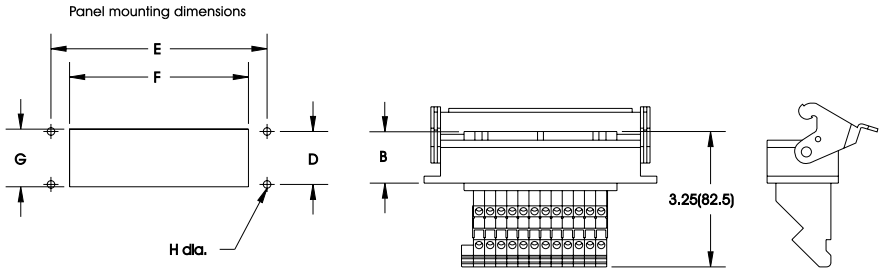
2) All dimensions shown are for overall clearance purposes. They are not necessarily true component dimensions. All metric dimension conversions are rounded.

3) Dimensions: Inches (mm)

Dual Latch - (On Shell Sizes 10, 16 & 24)



Single Latch - (On Shell Size 06)

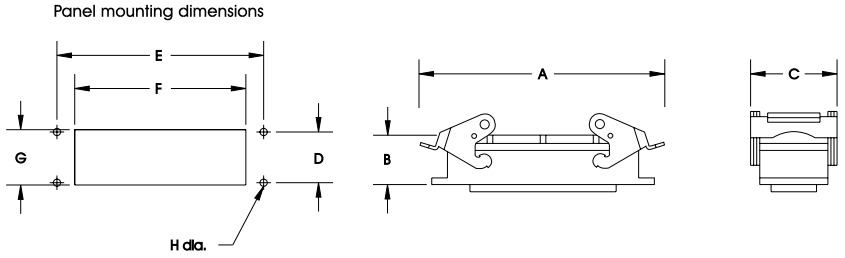


Pin Socket

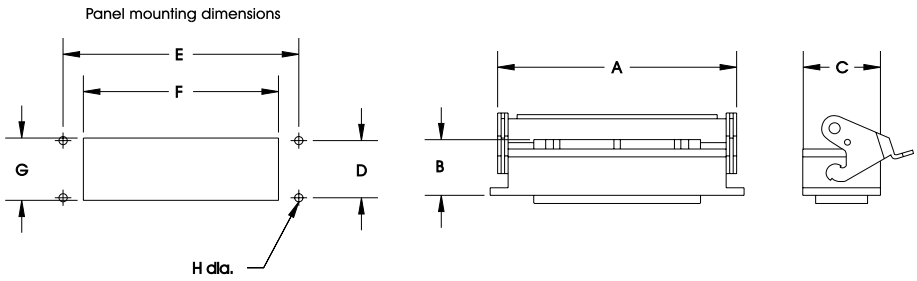
1P00/2P00 Terminal Block Receptacle (RT Series only)

Shell Size	A	B	C	D	E	F	G	H
06	2.99 (76.0)	1.12 (28.5)	1.69 (43.0)	1.26 (32.0)	2.76 (70.0)	1.89 (48.0)	1.38 (35.0)	.177 (4.5)
10	5.32 (135.0)	1.12 (28.5)	1.69 (43.0)	1.26 (32.0)	3.27 (83.0)	2.36 (60.0)	1.38 (35.0)	.177 (4.5)
16	6.02 (153.0)	1.12 (28.5)	1.69 (43.0)	1.26 (32.0)	4.07 (103.5)	3.23 (82.0)	1.38 (35.0)	.177 (4.5)
24	7.05 (179.5)	1.12 (28.5)	1.69 (43.0)	1.26 (32.0)	5.12 (130.0)	4.25 (108.0)	1.38 (35.0)	.177 (4.5)

Dual Latch - (On Shell Sizes 10, 16 & 24)



Single Latch - (On Shell Size 06)



Pin Socket

1P00/2P00 Panel Mount Receptacle

Shell Size	A	B	C	D	E	F	G	H
06	2.99 (76.0)	1.12 (28.5)	1.69 (43.0)	1.26 (32.0)	2.76 (70.0)	1.89 (48.0)	1.38 (35.0)	.177 (4.5)
10	5.32 (135.0)	1.12 (28.5)	1.69 (43.0)	1.26 (32.0)	3.27 (83.0)	2.36 (60.0)	1.38 (35.0)	.177 (4.5)
16	6.02 (153.0)	1.12 (28.5)	1.69 (43.0)	1.26 (32.0)	4.07 (103.5)	3.23 (82.0)	1.38 (35.0)	.177 (4.5)
24	7.05 (179.5)	1.12 (28.5)	1.69 (43.0)	1.26 (32.0)	5.12 (130.0)	4.25 (108.0)	1.38 (35.0)	.177 (4.5)

Replacement Contacts & Tools

RC, RE Series Contacts

			Silver Plated	Gold Plated
Female	AWG 20	0.5 mm^2	VN02 025 00351	VN02 025 00355
	AWG 18	0.75 - 1 mm^2	VN02 025 00361	VN02 025 00365
	AWG 16	1.5mm^2	VN02 025 00371	VN02 025 00375
	AWG 14	2.5 mm^2	VN02 025 00381	VN02 025 00385
	AWG 12	4mm^2	VN02 025 00391	VN02 025 00395
Male	AWG 20	0.5 mm^2	VN01 025 00351	VN01 025 00355
	AWG 18	0.75 - 1 mm^2	VN01 025 00361	VN01 025 00365
	AWG 16	1.5mm^2	VN01 025 00371	VN01 025 00375
	AWG 14	2.5 mm^2	VN01 025 00381	VN01 025 00385
	AWG 12	4mm^2	VN01 025 00391	VN01 025 00395

RD Series Contacts

Female	AWG 26-22	-0.14-0.37mm^2	VN02 016 0024C	—
	AWG 20	-0.5mm^2	VN02 016 0025C	—
	AWG 18	-0.75-1mm^2	VN02 016 0026C	—
	AWG 16	-1.5mm^2	VN02 016 0027C	—
	AWG 14	2.5mm^2	VN02 016 0028C	—
Male	AWG 26-22	-0.14-0.37mm^2	VN01 016 0024 1C	—
	AWG 20	-0.5mm^2	VN01 016 0025 1C	—
	AWG 18	-0.75-1mm^2	VN01 016 0026 1C	—
	AWG 16	-1.5mm^2	VN01 016 0027 1C	—
	AWG 14	-2.5mm^2	VN01 016 0028 1C	—

Crimp Tools for RC, RE Series

Crimping Tool

AF8

Locator 16 awg

Female - TP529
Male - M22520/1-05 UH2-5

Note: With Locking Device preventing the opening if contacts are not completely crimped.

Crimp Tools for RD Series

Crimping Tool

AF8

Locator 16 awg

Male/Female - TH493

Note: With Locking Device preventing the opening if contacts are not completely crimped.

Removal Tool

FG0200-146(1)

Contact Size	Contact (Only) Amps	M.V. Drop / Test Current Amps
Notes	**1**	**2**
16	**16A**	**51/13**
12	**35A**	**43/23**
4	**80A**	**24/80**

1. Contact (only) - non-interrupting maximum continuous rating amperes.
2. Millivolt drop measurement made at opposite ends of mated contacts - pin and socket.

Operating Temperature Rating	-40°F (-40°C) to 257°F (125°C). The combination of ambient temperatures and current loading of contacts must not produce an insert temperature in excess of 257°F (125°C).
Rated Voltage	380 V - VDE, 600V - UL/CSA
Test Voltage	3KV
Contact Resistance	≤ 1 micro ohms
Degree of Protection	IP65 for coupled connectors
Materials	**Inserts:** Self-extinguishing glass fiber reinforced thermoplastic - UL approved. **Contacts:** Silver plated or gold plated (2 µm) copper alloy. **Shell Enclosures:** Die-cast aluminum alloy - grey coated finish with epoxy powder. Molded: Die cast nickle plated aluminum inner shell PVC with over-mold. **Levers, Handles, Springs and Pins:** Zinc plated passivated steel Polymid. **Gaskets:** Antiaging elastometer, resistant to oil, grease and fuel.approved NOTE: Connectors should not be coupled and decoupled under electrical load.

Recognized under the Component program of Underwriters Laboratories, Inc.

Certified by Canadian Standards Association.

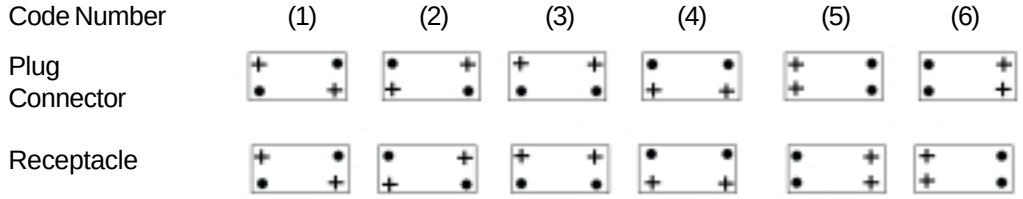
Coding & Current Carrying Capacities

Coding - Keying Positions

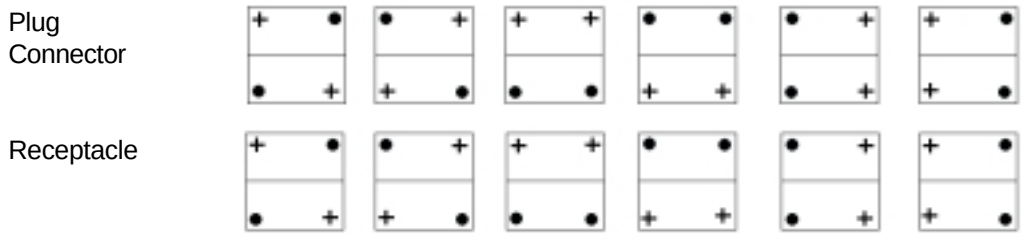
In order to avoid improper mating (which might occur when several connectors are mounted adjacently), coding can be applied. Every second insert mounting screw is replaced with a coding (keying) pin allowing only connectors with the same coding (keying) to be mated.

Coding Diagram
SINGLE POSITION CONNECTORS

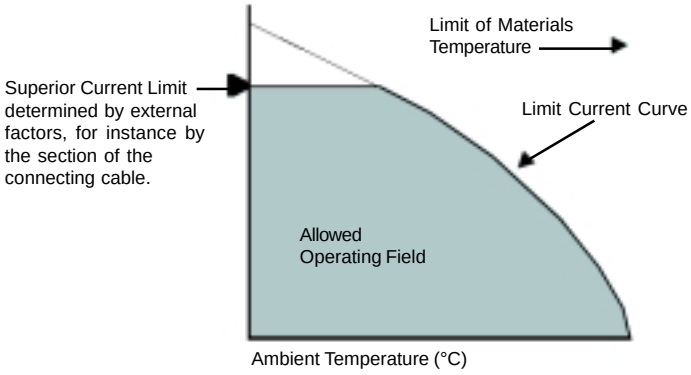
● Coding Pins
+ Mounting Screws



Coding Diagram
DUAL POSITION CONNECTORS



Current Carrying Capacities



The current carrying capacity (limit current) of the connector depends on the thermic properties of the materials which terminals and contacts are made of; therefore it depends on the heat developed from the connector and on the ambient temperature in which the connector operates.

Amphenol Corp. México www.amphenolmexico.com
Prol. Reforma 61-6B2 México, D.F. 01330 México Tel. +52 (55) 5258-9984

MR / MF

Applications:

- High flexibility/ High Bend Applications
- Factory Equipment Interconnects
- Machine Tools
- Control Panels
- Conveyor Systems
- Automotive Assembly Equipment
- Flex & Static Track
- Transfer Shuttles

Performance Features:

Designed and manufactured to perform at:

- Over 9 million continuous rolling flex cycles at a minimum bend radius of 10X OD
- Tic-Toc/twist test per MIL-C-13777G

Specifications:

- UL Type TC (600V)
- CSA AWM II A/B 600V FT4

Characteristics:

- Operating Temperature: 25°C to 90°C
- Voltage Rating: 600 Volt
- Product Description:
  Conductor - 16 AWG (1,50 mm) 65/34, stranded bare copper
  Insulation - Red PVC/Nylon or Blue PVC/Nylon
  Jacket - Specially formulated thermoplastic elastomer

8J / 8F

Applications:

- Factory Equipment Interconnect
- Machine Tools
- Stationary Track/Tray

Specifications:

- UL Type TC (600V)
- CSA AWM II A/B 600V FT4

Characteristics:

- Operating Temperature: 25°C to 90°C
- Voltage Rating: 600 Volt
- Product Description:
  Conductor - 16 AWG (1,50 mm) 65/34, stranded bare copper
  Insulation - Red PVC/Nylon or Blue PVC/Nylon
  Jacket - Specially formulated, oil resistant PVC

NOTE: Other cables are available.
Please consult factory for more information.

Amphenol Corp. México

Prolongación Reforma 61-6B2
Col. Paseo de las Lomas
México, D.F. 01330 México
Tel +52 (55) 5258-9984
Fax +52 (55) 5081-6890
info@amphenolmexico.com

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