R3

All Environment Circular Connectors

R3 Connector Systems, Inc.
13912 Mountain Avenue - Chino, CA 91710
Tel: (909)548-3255 - Fax: (909)548-2287 - www.r3connectors.com

R³ Circular Connector Features

- Versatile Use (virtually any environment)
- Bayonet Lock Coupling - Quarter Turn
- 2000 Couplings - Minimum
- No Lock Wires Necessary
- Positive Quick Connect/Disconnect
- Temperature Range -55°C to 200°C Depending On Elastomers
- Waterproof - 10 Meters / 12 Hours
- Shock Resistance to 50 g's
- Vibration Resistance to 20 g's
- Design Based On VG95234 (NATO) & MIL-C-5015 (USA)
- Thermocouple Contacts Size 16 - Chromel; Alumel & Others
- Fiberoptic Termini For Any Configuration Using Size 16 Contacts
- Glass To Metal Seal (Hermetic) Versions
- Audible, Visual & Tactile Evidence Of Full Coupling

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Cylindrical Electrical and Optical multi pole (termini) connectors are typically configured such that one side of a mated pair is mounted on a panel or box. This connector is usually referred to as a "Receptacle". Note that it's gender can be male or female. The only criteria (except when specifying fiber optic termini) is that the source of your current and voltage is typically the female side (socket contacts) for operator safety. The mating plug is usually attached to a cable which has to couple with the receptacle. Plugs are available in Straight or Right Angle configurations.

In some applications, the receptacle can be terminated to a cable as well. This is known as an Inline Receptacle and it has no mounting flange.

A wide variety of back end (backshell) fittings plus seals, gaskets and wire sealing grommets are available to tailor either half of the connector set, to fit a particular environmental application.

Other unique configurations exist to satisfy specific needs. For example, we offer a PANEL MOUNT PLUG for applications where "Daisy Chains" of connector sets are needed to maintain contact gender on exposed parts for safety purposes. Page 37.

Another variant is known as a "THROUGH BULKHEAD" Receptacle. This is actually a double-ended square flange receptacle which has male contacts on one side and female contacts on the other - again to maintain gender integrity for safety purposes. Page 36.

A BRIEF COMMERCIAL

R³ will tailor our products to meet any diverse requirement at no additional cost to you. You only need to ask!

We are prepared to tool new products and to become an extension of your Engineering Department. Invite us to be a member of your design team.

The following pages reflect general offerings. They should satisfy a majority of applications, however, a vast library of derivatives and special products exist in our archives. If a design to meet your needs is not already on file, we'll develop one which will.

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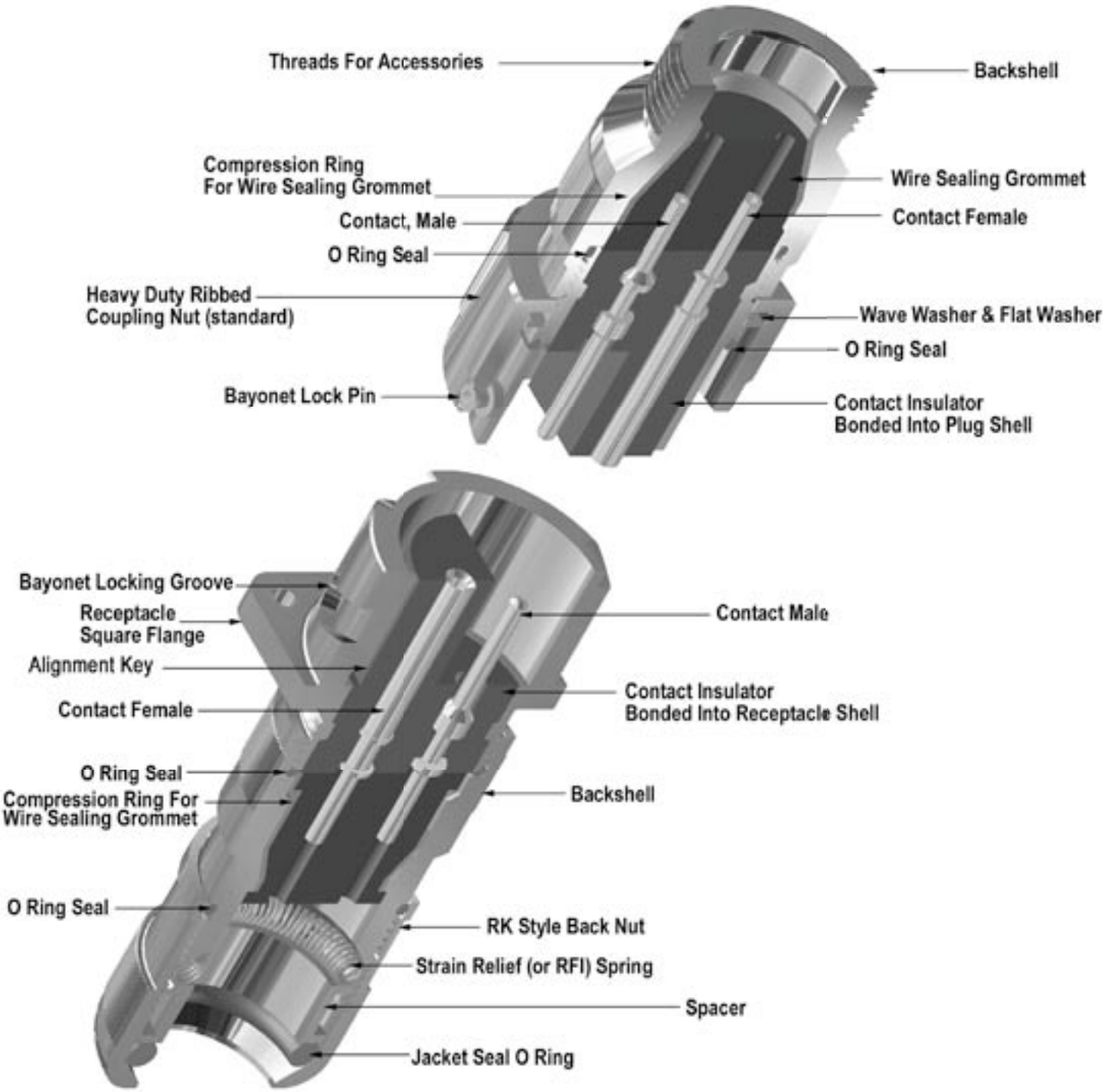
R³ Connectors - Sectional Connector View

This is a cut-away view of a mating pair of a plug and receptacle that illustrates typical component pieces. Male and female contacts are shown in both halves to show that either side can be either gender. The physical characteristics may vary depending on the backshell and accessories.



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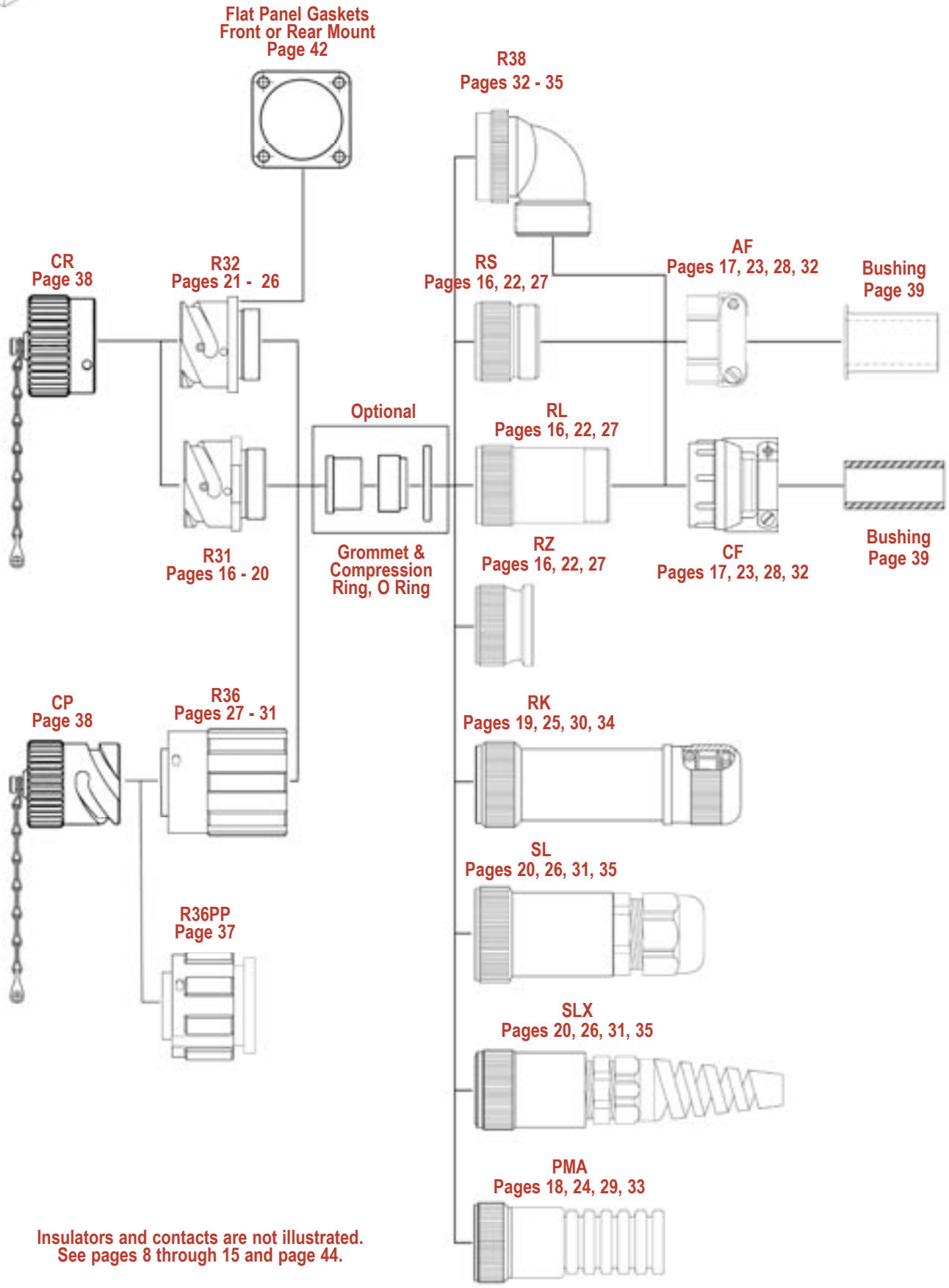
R³ Connectors - Break Down Schematic



Insulators and contacts are not illustrated.
See pages 8 through 15 and page 44.

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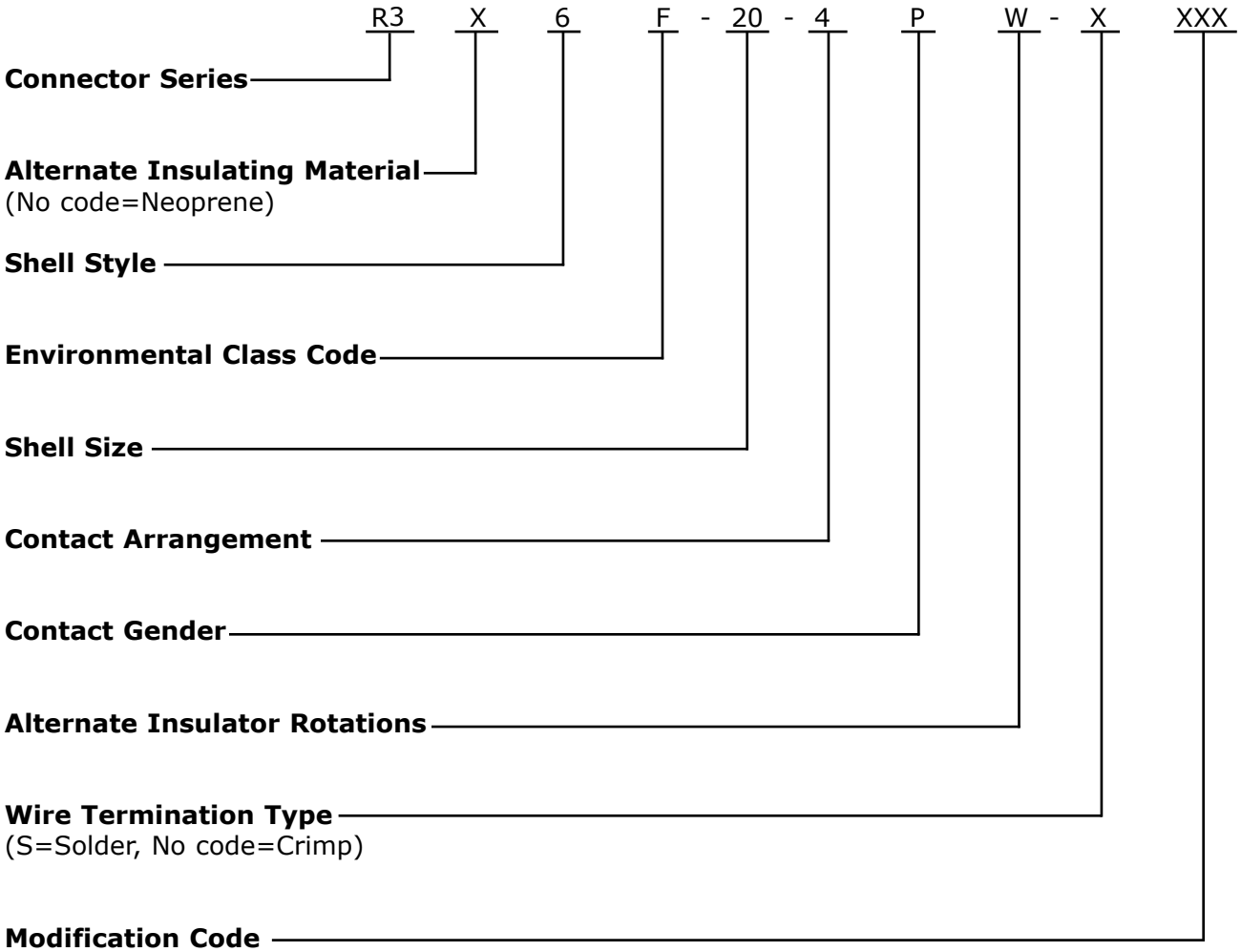

Typical Part Number = R36F-20-4PW

Connector Series
R3..... Rugged Trilock Coupling

Alternate Insulating Material
Standard..... Neoprene
V..... Fluoroelastomers
P..... Plastic
S..... Silicone Rubber

Shell Style
1..... In-line receptacle - round flange with flats
2..... Front or Rear panel mount receptacle
6..... Straight Plug Connector
6PP..... Panel Plug - square flange
8..... 90° Plug Connector
DM..... Dummy Receptacle - square flange
TB..... Through Bulkhead Receptacle

Environmental Class Code
Classes are based on the type of backshell, seals and accessories. See pages 16 to 35.

Shell Size
10SL,14S,16S,16,18,20,22,24,28,32,36,40

Contact Arrangement
Defined by the Quantity and size of the contacts, see pages 8 to 15 for pictorials. For the electrical service rating, see page 45 (inside back cover).

Contact Gender
P - Pins - Male contacts
S - Sockets - Female contacts
PS - Pin - Socket for R3TB only

Alternate Insulator Rotations
W,X,Y,Z, see page 7.

Wire Termination Type
No suffix...Crimp for AWG wire
S.....Solder
Z.....No contacts supplied
TC1...Thermocouple - Cromel, Alumel Type K
TC2...Thermocouple - Copper, Constantan Type T
TC3...Thermocouple - Iron, Constantan Type J
TC4...Thermocouple - Chromel, Constantan Type E

Modification Code
Ask for assistance. ***Modifications are limited only by your imagination.***

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Contact Arrangement	Total Contacts	Contact Size					Service Rating* Pg. 45
		0	4	8	12	16	
10SL-3	3					3	A
10SL-4	2					2	A
10SL-55	3					3	TC
14S-1	3					3	A
14S-2	4					4	I
14S-5	5					5	I
14S-6	6					6	I
14S-10	4					4	I
14SA-7	7					7	I
16S-1	7					7	A
16-10	3				3		A
16-11	2				2		A
18-1	10					10	A
18-4	4					4	D
18-6	1		1				D
18-8	8				1	7	A
18-9	7				2	5	I
18-11	5				5		A
20-2	1	1					D
20-3	3				3		D
20-4	4				4		D
20-8	6			2		4	I
20-11	13					13	I
20-15	7				7		A
20-18	9				3	6	A
20-19	3			3			A
20-21	9				1	8	A
20-22	6			3		3	A
20-25	13					13	I
20-27	14					14	A
20-29	17					17	A
20-30	13					13	I
20-33	11					11	A
20A-8	8			2		6	I
20A-9	9				9		J=D,R=I
20A-48	19					19	I
22-1	2			2			D
22-2	3			3			D
22-8	2				2		B
22-14	19					19	A
22-19	14					14	A
22-21	3	1				2	A
22A-10	10					10	A
24-2	7				7		D
24-7	16				2	14	A
24-9	2		2				A
24-10	7			7			A
24-11	9			3	6		A
24-21	10			1		9	D
24-22	4			4			D
24-28	24					24	I
24-67	19				19		A
24A-6	6			2	4		D
24A-11	11			2		9	A
24A-25	25					25	I
24A-28	28					28	I
28-6	3		3				D
28-10	7		2	2	3		G=D, R=A
28-11	22				4	18	A
28-12	26					26	A
28-13	26					26	A
28-15	35					35	A
28-21	37					37	A
28-22	6		3			3	D
28-51	12				12		D
28A-9	9		4			5	A

Contact Arrangement	Total Contacts	Contact Size					Service Rating* Pg. 45
		0	4	8	12	16	
32-1	5	2			3		A=E, R=E
32-5	2	2					D
32-6	23		2	3	2	16	A
32-7	35				7	28	ABhj=I,R=A
32-8	30				6	24	A
32-13	23				5	18	D
32-15	8	2			6		D
32-17	4		4				D
32-22	54					54	A
32-59	42			2		40	A
32-68	16		4			12	A
32-76	19				19		A
32A-1	1	SIZE 4/0					A
32A-8	8			8			A
32A-13	13				13		D
32A-22	22	2				20	A
32A-25	25				25		A
32A-48	48					48	I
32A-55	55					55	A
32B-22	22		2			20	A
36-3	6	3			3		D
36-5	4	4					A
36-6	6	2	4				A
36-7	47				7	40	A
36-9	31		1	2	14	14	A
36-10	48					48	A
36-11	48					48	A
36-12	48					48	A
36-16	47				7	40	A
36-17	47				7	40	A
36-18	31		1	2	14	14	A
36-54	39			8		31	A
36-78	14			12		2	D
36A-1	1	SIZE 4/0					C
36A-22	22				22		D
36A-61	6		2		4		E
40-9	47			1	22	24	A
40-10	29		4	9		16	A
40-19	19		2		17		A
40-56	85					85	A
40A-5	5	5					A
40A-10	8		4			4	D
40A-20	20			2	18		D
40A-21	21		1		20		21=D, R=A
40A-25	25		1		24		A
40A-30	30		1		29		A
40A-31	31				31		D
40A-35	35				35		D
40A-38	38				38		A
40A-60	60					60	A
40B-19	19			19			A

See pictorials, pages 8 to 15 for contact arrangements.

* Service Rating - See inside back cover for values.
R = Remainder
TC = Thermocouple (see page 44)

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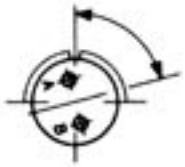
To prevent cross-plugging two or more identical contact arrangements; the insulator can be rotated in the shell with respect to the alignment key. The angle designation is added after the connector gender in the part number. Example:16S-1P is "normal" 16S-1PW has the male contact insulator rotated 80° clockwise. (Mating female contact insulators are rotated conversely).

Alternate Rotations

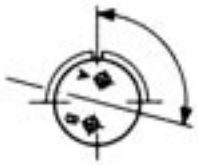
(Front view of male insulator)

Normal

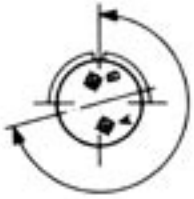
W



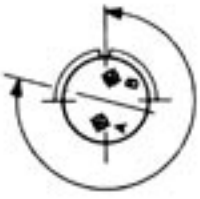
X



Y



Z



Insulator Type	Degrees For Alternate Positions			
	W	X	Y	Z
10SL-3	-	-	-	180
14S-2	-	120	240	-
14S-5	-	110	-	-
14S-6	90	-	-	-
16S-1	80	-	-	280
16-10	90	180	270	-
16-11	35	110	250	325
18-1	70	145	215	290
18-4	35	110	250	325
18-8	70	-	-	290
18-9	80	110	250	280
18-11	-	170	265	-
20-3	70	145	215	290
20-4	45	110	250	-
20-8	80	110	250	280
20-15	80	-	-	280
20-18	35	110	250	325
20-21	35	110	250	325
20-22	80	110	250	280
20-27	35	110	250	325
20-29	80	-	-	280
20-33	-	-	-	280
20A-8	35	110	250	325
20A-9	-	110	250	-
20A-48	-	80	280	-
22-1	35	110	250	325
22-2	70	145	215	290
22-8	35	110	250	325
22-14	80	-	-	280
22-19	80	110	250	280
22-21	80	110	250	280
22A-10	-	120	240	-
24-2	80	-	-	280
24-7	80	110	250	280
24-9	35	110	250	325
24-10	80	-	-	280
24-11	35	110	250	325
24-21	80	110	250	280
24-22	45	110	250	-
24-28	80	110	250	280
24-67	80	-	-	335
24A-6	42	134	262	339
24A-11	35	110	250	325
24A-25	80	110	250	280
24A-28	65	-	-	-

Insulator Type	Degrees For Alternate Positions			
	W	X	Y	Z
28-6	70	145	215	290
28-10	80	110	250	280
28-11	80	110	250	280
28-12	90	180	270	-
28-15	80	110	250	280
28-21	80	110	250	280
28-22	70	145	215	290
28-51	80	135	195	-
28A-9	110	250	260	280
32-1	80	110	250	280
32-5	35	110	250	325
32-6	80	110	250	280
32-7	80	125	235	280
32-8	80	125	235	280
32-13	80	110	250	280
32-15	35	110	250	280
32-17	45	110	250	-
32-22	80	110	250	280
32-59	36	108	252	324
32-68	65	135	225	275
32-76	80	110	250	280
32A-8	35	122	-	315
32A-13	65	130	230	295
32A-22	55	135	230	295
32A-25	60	120	-	-
32A-55	80	110	250	280
32B-22	35	110	250	325
36-5	45	120	240	-
36-6	35	110	250	325
36-7	80	110	250	280
36-9	80	125	235	280
36-10	80	125	235	280
36-54	67	-	-	-
36-78	35	106	254	325
36A-22	80	110	250	280
36A-61	80	-	-	280
36A-72	-	110	-	-
40-9	65	125	225	310
40-10	65	125	225	310
40-19	35	110	250	325
40-56	72	144	216	288
40A-5	33	-	-	270
40A-20	80	110	250	280
40A-21	50	130	260	280
40A-25	50	130	260	280
40A-30	30	-	-	295
40A-31	80	110	250	280
40A-35	70	130	230	290
40A-60	80	110	250	280
40B-19	35	105	255	325

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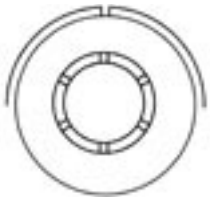
Front View Of Male Insulator

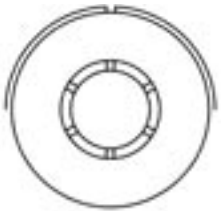
One Contact

18-6
4
D

20-2
0
D



32A-1
4/0
A



36A-1
4/0
C

Contact Arrangement
Contact Size
Service Rating

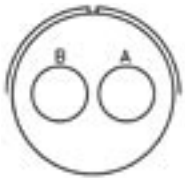
Two Contacts

10SL-4
16
A

16-11
12
A

22-1
8
D

22-8
12
B



24-9
4
A

Contact Arrangement
Contact Size
Service Rating

32-5
0
D

Contact Arrangement
Contact Size
Service Rating

Three Contacts

10SL-3
16
A

10SL-55
16
Thermocouple
Chromel & Alumel
& Copper

14S-1
16
A

14S-12
16
A

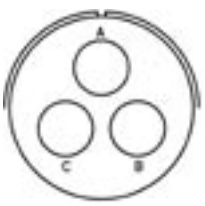
16-10
12
A

Contact Arrangement
Contact Size
Service Rating

20-3
12
D

22-2
8
D

22-21
1/0, 2/16
A



28-6
4
D

Contact Arrangement
Contact Size
Service Rating

16 12 8 4 0 4/0

Contact Size Legend

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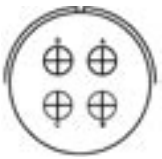
Front View Of Male Insulator

Four Contacts

14S-2
16
I

14S-10
16
I

18-4
16
D



20-4
12
D

24-22
8
D

Contact Arrangement
Contact Size
Service Rating

32-17
4
D

36-5
0
A

Contact Arrangement
Contact Size
Service Rating

Five Contacts

14S-5
16
I

18-11
12
A

32-1
2/0, 3/12
A=E; B,C,D,E=D

40A-5
0
A

Contact Arrangement
Contact Size
Service Rating

Six Contacts

14S-6
16
I

20-8
2/8, 4/16
I

20-22
3/8, 3/16
A

24A-6
2/8, 4/12
D

Contact Arrangement
Contact Size
Service Rating

28-22
3/4, 3/16
D

36-3
3/0, 3/12
D

36-6
2/0, 4/4
A

Contact Arrangement
Contact Size
Service Rating

16 12 8 4 0 4/0

Contact Size Legend

CONTACT ARRANGEMENTS

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Front View Of Male Insulator

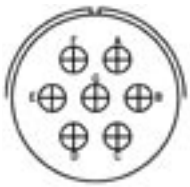
Seven Contacts

14SA-7
16
I

16S-1
16
A

18-9
2/12, 5/16
I

20-15
12
A



24-2
12
D

Contact Arrangement
Contact Size
Service Rating

24-10
8
A

28-10
2/4, 2/8, 3-12
C=D, R=A

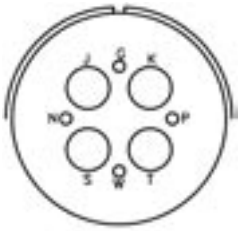
Contact Arrangement
Contact Size
Service Rating

Eight Contacts

18-8
1/12, 7/16
A

20A-8
2/8, 6/16
I

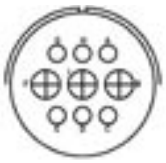
32-15
2/0, 6/12
D



40A-10
4/4, 4/16
D

Contact Arrangement
Contact Size
Service Rating

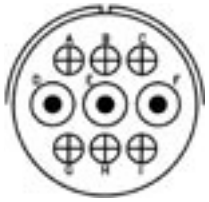
Nine Contacts



20-18
3/12, 6/16
A

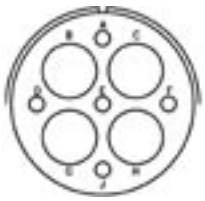
20-21
1/12, 8/16
A

20A-9
12
J=D, R=I



24-11
3/8, 6/12
A

Contact Arrangement
Contact Size
Service Rating



28A-9
4/4, 5/16
A

Contact Arrangement
Contact Size
Service Rating

R = Remainder

16 12 8 4 0 4/0

Contact Size Legend

CONTACT ARRANGEMENTS

13912 Mountain Avenue - Chino, CA 91710 - Tel:(909)548-3255 - Fax:(909)548-2287 - www.r3connectors.com

Front View Of Male Insulator

Ten Contacts

18-1
16
B,C,F,G=A R=I

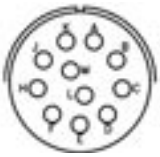
18-24
16
B,C,F,G=A R=I

22A-10
16
A

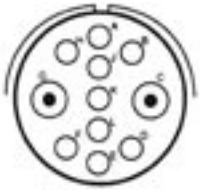
24-21
1/8, 9/16
D

Contact Arrangement
Contact Size
Service Rating

Eleven Contacts



20-33
16
A



24A-11
2/8, 9/16
A

Twelve Contacts

28-51
12
D

Contact Arrangement
Contact Size
Service Rating

Thirteen Contacts

20-11
16
I

20-25
16
I

20-30
16
I

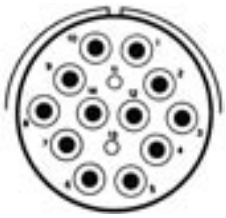
32A-13
12
D

Contact Arrangement
Contact Size
Service Rating

Fourteen Contacts

20-27
16
A

22-19
16
A



36-78
12/8, 2/16
D

Contact Arrangement
Contact Size
Service Rating

CONTACT ARRANGEMENTS

R = Remainder

Contact Size Legend

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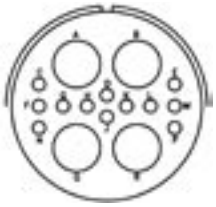
Front View Of Male Insulator

Sixteen Contacts

24-7
2/12, 14/16
A



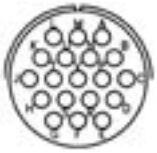
32-68
4/4, 12/16
A

Seventeen Contacts

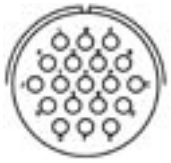
20-29
16
A

Contact Arrangement
Contact Size
Service Rating

Nineteen Contacts

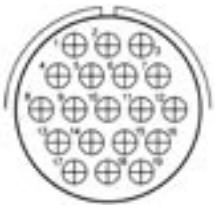


20A-48
16
I



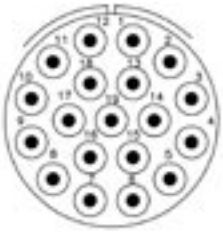
22-14
16
A

24-67
12
A



32-76
12
A

Contact Arrangement
Contact Size
Service Rating

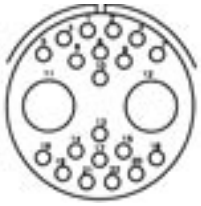


40B-19
8
A

Contact Arrangement
Contact Size
Service Rating

Twenty-two Contacts

28-11
4/12, 18/16
A



32B-22
2/4, 20/16
A

36A-22
12
D

Contact Arrangement
Contact Size
Service Rating

Contact Size Legend

CONTACT ARRANGEMENTS

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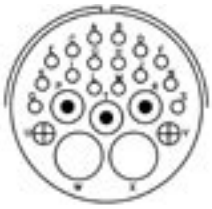
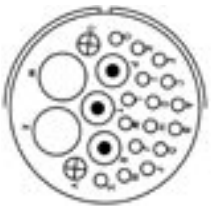
Front View Of Male Insulator

Twenty-three Contacts



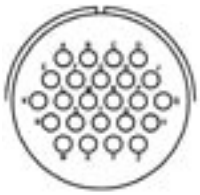
32-6
2/4, 3/8, 2/12, 16/16
A



32-16
2/4, 3/8, 2/12, 16/16
A

32-13
5/12, 18/16
D

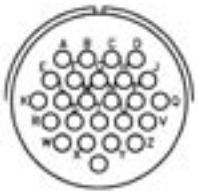
Twenty-four Contacts



24-28
16
I

Contact Arrangement
Contact Size
Service Rating

Twenty-five Contacts

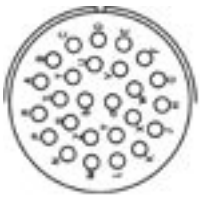


24A-25
16
I

32A-25
12
A

Twenty-six Contacts

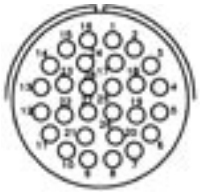
28-12
16
A



28-13
16
A

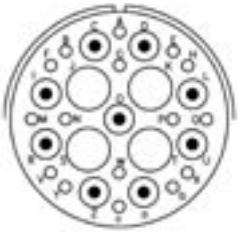
Contact Arrangement
Contact Size
Service Rating

Twenty-eight Contacts



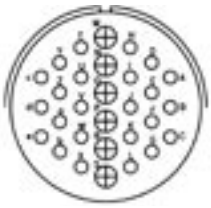
24A-28
16
I

Twenty-nine Contacts



40-10
4/4, 9/8, 16/16
A

Thirty Contacts



32-8
6/12, 24/16
A

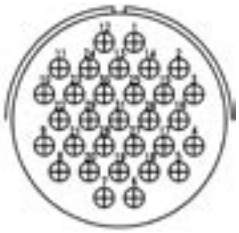
40A-30
1/4, 29/12
A

Contact Arrangement
Contact Size
Service Rating

Thirty-one Contacts

36-9
1/4, 2/8, 14/12, 14/16
A

36-18
1/4, 2/8, 14/12, 14/16
A



40A-31
12
D

Contact Arrangement
Contact Size
Service Rating

16 12 8 4 0 4/0

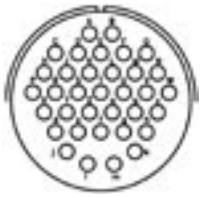
Contact Size Legend

CONTACT ARRANGEMENTS

13912 Mountain Avenue - Chino, CA 91710 - Tel:(909)548-3255 - Fax:(909)548-2287 - www.r3connectors.com

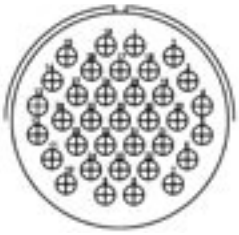
Front View Of Male Insulator

Thirty-five Contacts



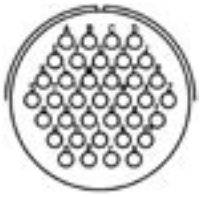
28-15
16
A

32-7
7/12, 28/16
A,B,h,j=I R=A



40A-35
12
D

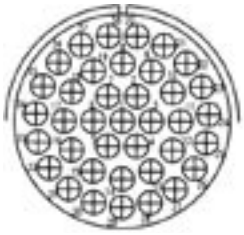
Thirty-seven Contacts



28-21
16
A

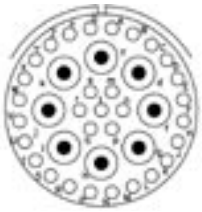
Contact Arrangement
Contact Size
Service Rating

Thirty-eight Contacts



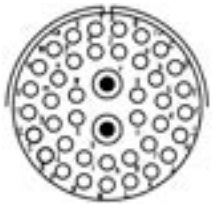
40A-38
12
A

Thirty-nine Contacts



36-54
8/8, 31/16
A

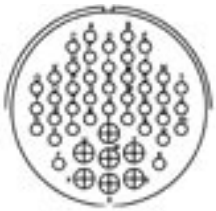
Forty-two Contacts



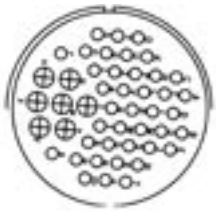
32-59
2/8, 40/16
A

Contact Arrangement
Contact Size
Service Rating

Forty-seven Contacts

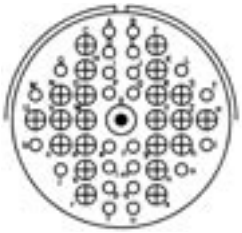


36-7
7/12, 40/16
A



36-16
7/12, 40/16
A

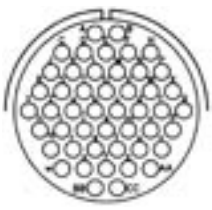
36-17
7/12, 40/16
A



40-9
1/8, 22/12, 24/16
A

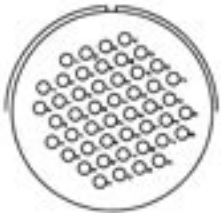
Contact Arrangement
Contact Size
Service Rating

Forty-eight Contacts

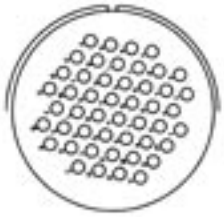


32A-48
16
I

36-10
16
A



36-11
16
A



36-12
16
A

Contact Arrangement
Contact Size
Service Rating

R = Remainder

Contact Size Legend

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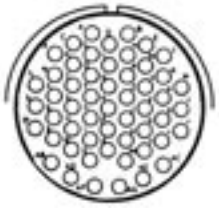
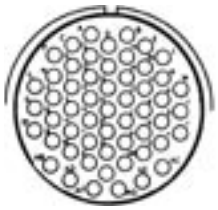
Front View Of Male Insulator

Fifty-four Contacts



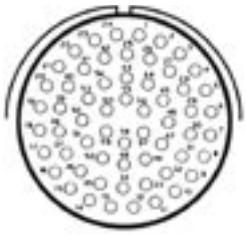
32-22
16
A

Fifty-five Contacts



32A-55
16
A

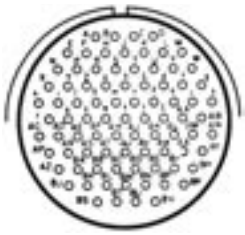
Sixty Contacts



40A-60
16
A

Contact Arrangement
Contact Size
Service Rating

Eighty-five Contacts



40-56
16
A

Contact Arrangement
Contact Size
Service Rating

These contact arrangements constitute our "Standard Offering". Many other configurations exist and are available. We will also tool **"Custom Configurations"** to satisfy any requirement. Please contact our Technical Sales Department for assistance.

CONTACT ARRANGEMENTS

16 12 8 4 0 4/0

Contact Size Legend

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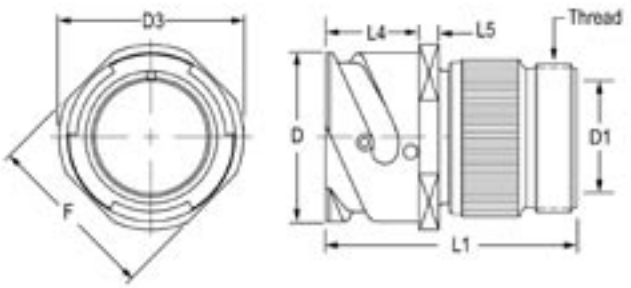
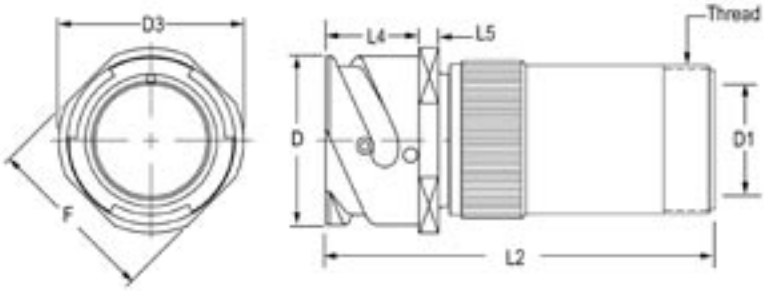
R31 - Inline Receptacles

In-line Receptacles are intended for direct attachment to cables, wires or flexible conduit. They will mate with Straight, Right Angle and Panel Plugs. See pages 27-31, 32-35 and 37.



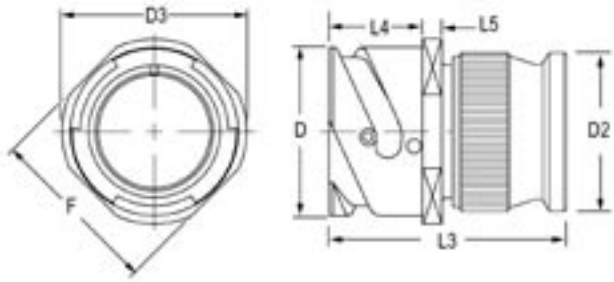
R31RS - / R31RAS -

This In-line Receptacle Connector has a short backshell with rear threads to accept a cable clamp or other accessory hardware. It includes a wire sealing grommet and a compression ring. If no grommet and compression ring are required, insert the code letter "A" after the R in the part number. Example: R31RAS-



R31RL- / R31RAL -

This In-line Receptacle is the same as R31RS, except the backshell is longer to allow additional working room for wire termination. To eliminate the wire sealing grommet and the compression ring, insert the code letter "A" after the R in the part number. Example: R31RAL-



R31RZ - / R31RAZ -

This is the same as R31RS except the backshell has no rear threads. It is intended for use with individual wires only. It can also double as a potting cup. To eliminate the grommet and compression ring specify R31RAZ-

R 3 1

Shell Size	D Max	D1 Typ	D2 Max	D3 Max	F Nominal	L1 Max	L2 Max	L3 Max	L4 +.4 -0	L5 ±0.2	Thread In Inches
10SL	18.2	8.5	20	25.2	20.6	39	67	35	14.2	2.8	5/8-24 UNEF
14S	24.6	11.7	24	29.8	25.4	43	67	35	14.2	3.2	¾ -20 UNEF
16S	27.4	14	26	32.3	28.6	43	67	36	14.2	3.2	7/8-20 UNEF
16	27.4	14	26	32.3	28.6	50	77	48	19	3.2	7/8-20 UNEF
18	30.8	17	29.5	34.8	31.7	52	82	48	19	4	1-20 UNEF
20	34.2	21	33	37.8	34.9	52	82	49	19	4	1 3/16-18 UNEF
22	37.4	21	36	41	38	53	82	49	19	4	1 3/16-18 UNEF
24	40.9	26	40	44.6	41.3	53	84	50	20.6	4	1 7/16-18 UNEF
28	46.7	26	46	50.9	47.6	59	88	50	20.6	4	1 7/16-18 UNEF
32	53.4	32	51.5	57	54	64	88	52	22.2	4	1 ¾-18 UNS
36	59.6	37	58	63.6	60.6	64	88	53	22.2	4	2-18 UNS
40	65.5	45	64.5	70	66.5	79	88	53	22.2	4	2 1/4-16 UN

All dimensions are in millimeters except when noted.

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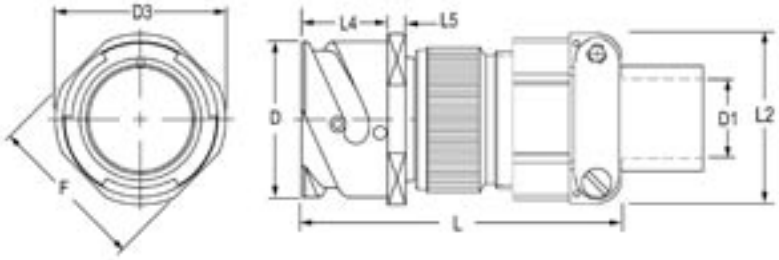
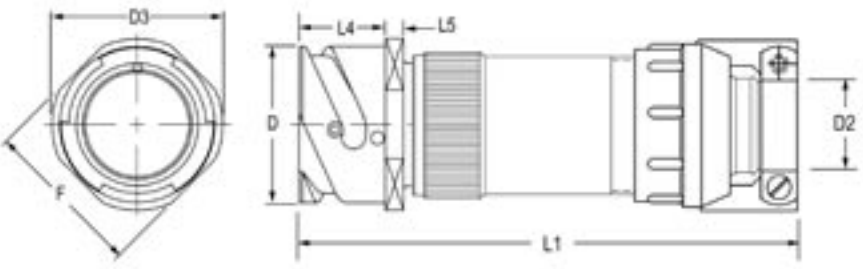


R31F - / R31AF -

This is one of the most common connector configurations. It utilizes the popular MS3057A Series Military Cable Clamp and Bushings for Wire Strain Relief, see page 39.
This connector is intended for use with individual wires. A wire sealing grommet and compression ring are included for a moisture seal. If no Grommet and Compression ring are required, insert the code letter "A" before the F in the part number. Example: R31AF -.

Shell Size	D Max	D1 Max	D2 Range	D3 Max	F Nominal	L Approx.	L1 Approx.	L2 Max	L4 +.4 -0	L5 ±0.2
10SL	18.2	5.6	2.4 – 7.9	25.2	20.6	54	94	22	14.2	2.8
14S	24.6	8	5.8 – 11	29.8	25.4	60	95	27	14.2	3.2
16S	27.4	11	8 – 13.5	32.3	28.6	62	95	30	14.2	3.2
16	27.4	11	8 – 13.5	32.3	28.6	69	104	30	19	3.2
18	30.8	14	9.6 – 15.9	34.8	31.7	70	109	33	19	4
20	34.2	16	11.3 – 19	37.8	34.9	70	109	35	19	4
22	37.4	16	11.3 – 19	41	38	71	109	35	19	4
24	40.9	19	15.5 – 23.8	44.6	41.3	74	112	43	20.6	4
28	46.7	19	15.5 – 23.8	50.9	47.6	80	118	43	20.6	4
32	53.4	24	23.4 – 31.7	57	54	85	126	51	22.2	4
36	59.6	32	23.4 – 35	63.6	60.6	87	130	58	22.2	4
40	65.5	35	29.9 – 41	70	66.5	116	130	65	22.2	4

All dimensions are in millimeters except when noted.



R31CF - / R31ACF -

This connector has a backshell and a MS3057C cable clamp (see page 39) to grip and seal on jacketed cables. A wire sealing grommet and compression ring are included to also seal on the individual wires. If no grommet and compression ring are required, insert the code letter "A" before the CF in the part number. Example: R31ACF -.

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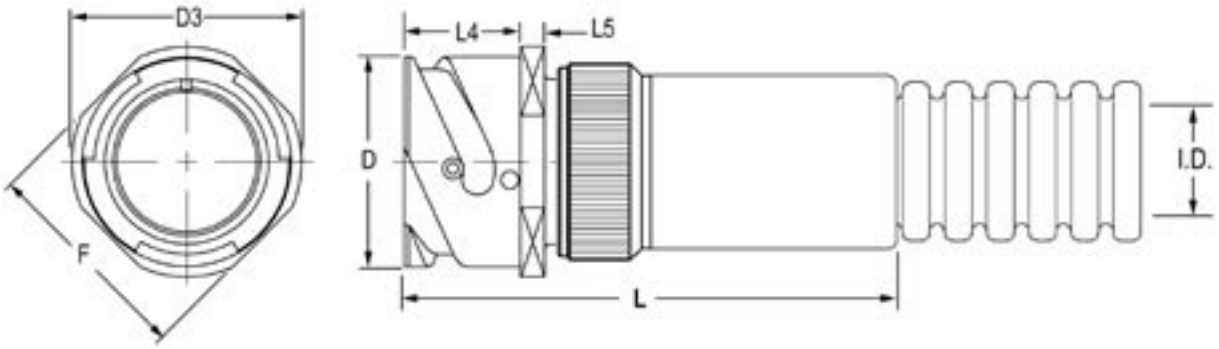
R31PMA -

This connector configuration allows direct attachment of "PMA" style flexible conduit. The dimensional information below is "typical". Any size conduit* can be accommodated. Please consult our Technical Sales Department for assistance in proper selection.



Typical Part Number: R31PMA-32-22P-VG2

Chart 1

Shell Size	D Max	D3 Max	F Nominal	L Typical	L4 +.4 -0	L5 ±0.2
10SL	18.2	25.2	20.6	53	14.2	2.8
14S	24.6	29.8	25.4	53	14.2	3.2
16S	27.4	32.3	28.6	53	14.2	3.2
16	27.4	32.3	28.6	58	19	3.2
18	30.8	34.8	31.7	58	19	4
20	34.2	37.8	34.9	58	19	4
22	37.4	41	38	58	19	4
24	40.9	44.6	41.3	76	20.6	4
28	46.7	50.9	47.6	76	20.6	4
32	53.4	57	54	78	22.2	4
36	59.6	63.6	60.6	81	22.2	4
40	65.5	70	66.5	88	22.2	4

All dimensions are in millimeters except when noted.

Chart 2

PMA Conduit I.D.	PMA Part Number Suffix
12	AG1
12	AG2
15	AG3
15	MG1
15	MG2
22	MG3
22	VG1
36	VG2
36	VG3
36	VG4
38	VG5
46	LJ1

**For assistance in proper conduit size and termination, or for terminating other conduit types, consult our Engineering Department.*

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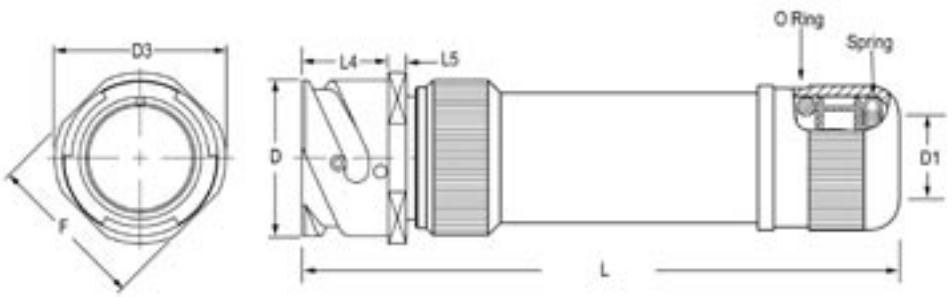
R31RK -

This In-line Receptacle Connector has a dual purpose backshell. It will grip and seal a smooth jacketed cable or flexible conduit or it will terminate overall shield braid on a cable to the backshell by simply swapping the position of the internal spring and O ring (Fig 2). Environmental sealing of any cable or conduit can be accommodated. Dimensions shown are for reference only. Consult our Technical Sales Department for assistance.

For Jacketed Cable Termination

Fig 1



For RFI Shielding

Typical Part Number: R31RK-32-22P-08

Fig 2

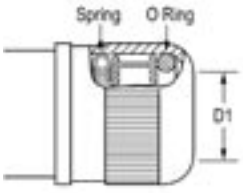


Chart 1

Shell Size	D Max	D3 Max	F Nominal	L Approx	L4 +.4 - 0	L5 ±0.2
10SL	18.2	25.2	20.6	110	14.2	2.8
14S	24.6	29.8	25.4	110	14.2	3.2
16S	27.4	32.3	28.6	110	14.2	3.2
16	27.4	32.3	28.6	110	19	3.2
18	30.8	34.8	31.7	127	19	4
20	34.2	37.8	34.9	127	19	4
22	37.4	41	38	133	19	4
24	40.9	44.6	41.3	134	20.6	4
28	46.7	50.9	47.6	134	20.6	4
32	53.4	57	54	136	22.2	4
36	59.6	63.6	60.6	136	22.2	4
40	65.5	70	66.5	136	22.2	4

All dimensions are in millimeters except when noted.

Chart 2

Part Number Suffix	D1 Cable Range
01	1.6 – 3.2
02	3.2 – 6.4
03	6.4 – 9.5
04	9.5 – 12.7
05	12.7 – 15.8
06	15.8 – 19
07	19 – 22
08	22 – 25
09	25– 28.6
10	28.6 – 31
11	31 – 35
12	35 – 38
13	38 – 41
14	41 – 45
15	45 – 48
16	48 – 51

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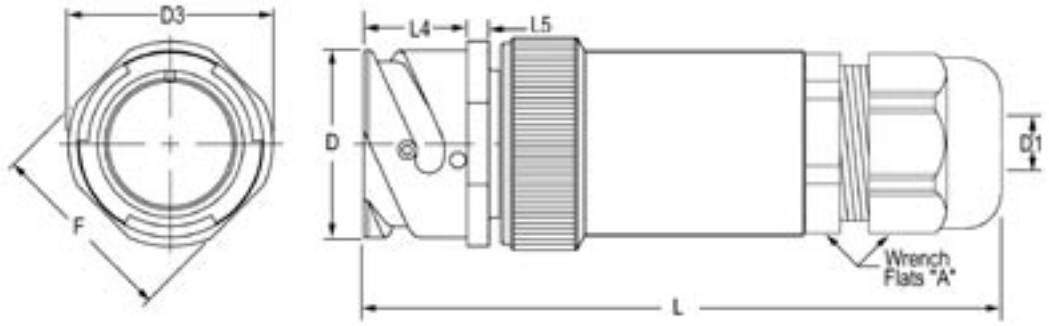


Typical Part Number: R31SL-32-22P-E2

R31SL -

This connector Backshell with it's nylon Strain relief, will grip and seal on any diameter flexible, jacketed cable.

Chart 1

Shell Size	D Max	D3 Max	F Nominal	L Max	L1 Max	L4 +.4 -0	L5 ±0.2
10SL	18.2	25.2	20.6	50	67	14.2	2.8
14S	24.6	29.8	25.4	50	67	14.2	3.2
16S	27.4	32.3	28.6	50	67	14.2	3.2
16	27.4	32.3	28.6	60	82	19	3.2
18	30.8	34.8	31.7	60	82	19	4
20	34.2	37.8	34.9	60	82	19	4
22	37.4	41	38	60	82	19	4
24	40.9	44.6	41.3	65	84	20.6	4
28	46.7	50.9	47.6	65	88	20.6	4
32	53.4	57	54	65	88	22.2	4
36	59.6	63.6	60.6	90	108	22.2	4
40	65.5	70	66.5	90	108	22.2	4

Chart 2

D1 Suffix Code For Cable Range	D1 Cable Range Min - Max	D1 Suffix Code For Cable Range	D1 Cable Range Min - Max	Wrench Flats A
A1	3 - 6.5	A2	2 – 5	15
B1	3.9 - 7.9	B2	2 – 6	19
C1	5 - 10	C2	3 – 7	22
D1	5.9 – 11.9	D2	8.6 – 9	24
E1	10 – 13.9	E2	10.7 – 12.2	27
G1	13.8 – 18	G2	12.2 – 15.6	33
J1	17.9 – 24.9	J2	13 – 20	42
K1	22 – 31.9	K2	20 – 26	53
L1	31.9 – 38	L2	24 – 31	60
M1	37 – 43.9	M2	29 – 35	65

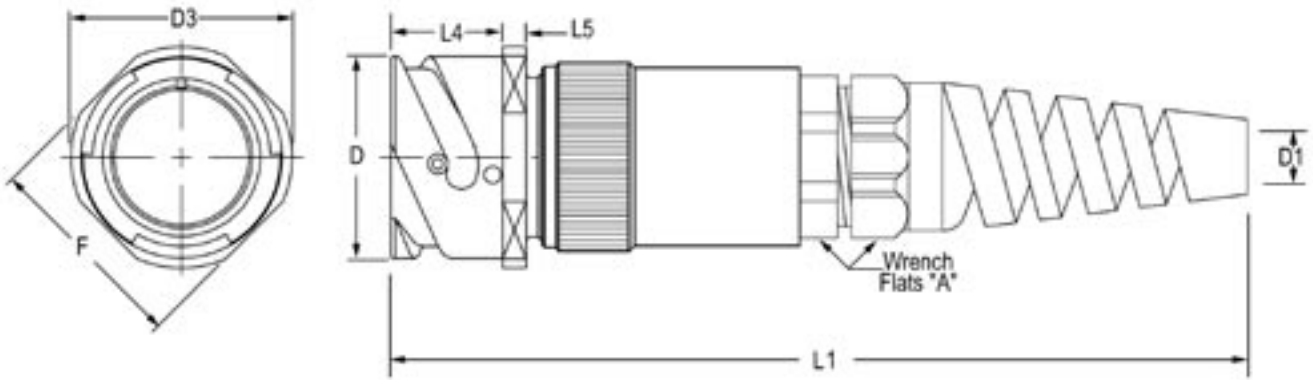
All dimensions are in millimeters except when noted.

R 3 1

R31SLX -

This connector Backshell and clamp is identical to R31SL above, except it has a flexible back end to limit the "bend radius" of the cable.

Typical Part Number: R31SLX-32-22P-E2



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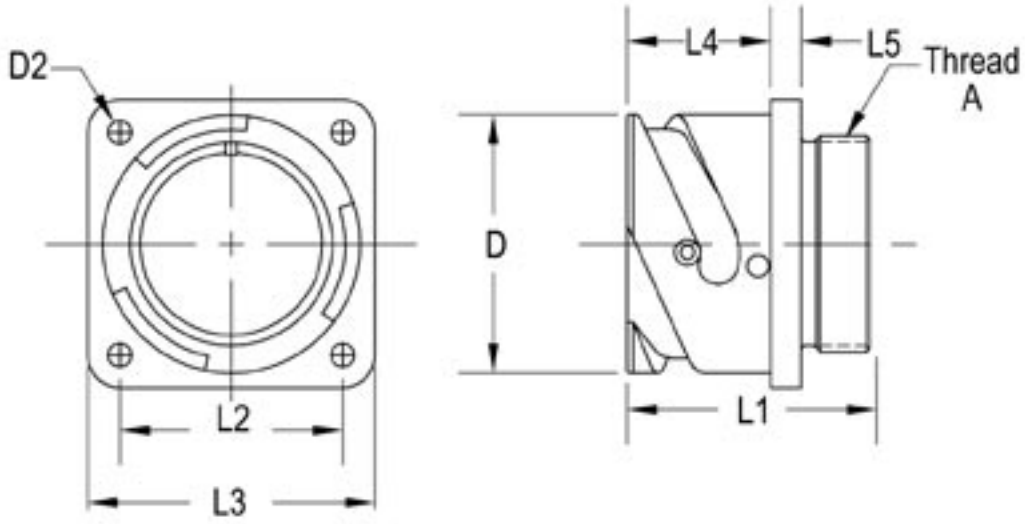
R32R - Panel Mount (Front or Rear) Square Flange Receptacles

This is a Square Flange Receptacle, suitable for mounting on the front of a Panel or Box and also for mounting from the rear of same providing the panel thickness does not exceed the dimensions shown below. This connector is environment proof when mounted on a sealed box or panel provided the proper panel gasket (see page 42) is used. Nut plates, shown on page 40, will facilitate installation. The mounting holes D2 in the receptacle can be provided threaded upon request.



Shell Size	D Max	D2 +.1-0	L1 ±0.3	L2 ±0.1	L3 ±0.3	L4 +.4 - 0	L5 ±0.2	Thread A In Inches	Max Panel Thickness Rear Mount
10SL	18.2	3.2	24.7	18.2	25.4	14.2	2.8	5/8-24UNEF	3.7
14S	24.6	3.2	24.7	23	30	14.2	3.2	¾-20UNEF	3.7
16S	27.4	3.2	24.7	24.6	32.5	14.2	3.2	7/8-20UNEF	3.7
16	27.4	3.2	33.8	24.6	32.5	19	3.2	7/8-20UNEF	3.7
18	30.8	3.2	33.8	27	35	19	4	1-20UNEF	3.7
20	34.2	3.2	33.8	29.4	38	19	4	1 1/8-18UNEF	3.7
22	37.4	3.2	33.8	31.8	41	19	4	1 ¼-18UNEF	3.7
24	40.9	3.7	35.7	34.9	44.5	20.6	4	1 3/8-18UNEF	5.2
28	46.7	3.7	35.7	39.7	50.8	20.6	4	1 5/8-18UNEF	5.2
32	53.4	4.3	37.3	44.5	57	22.2	4	1 7/8-16UN	6
36	59.6	4.3	37.3	49.2	63.5	22.2	4	2 1/16-16UN	6
40	65.5	4.3	37.3	55.5	69.9	22.2	4	2 5/16-16UNS	6

All dimensions are in millimeters except when noted.

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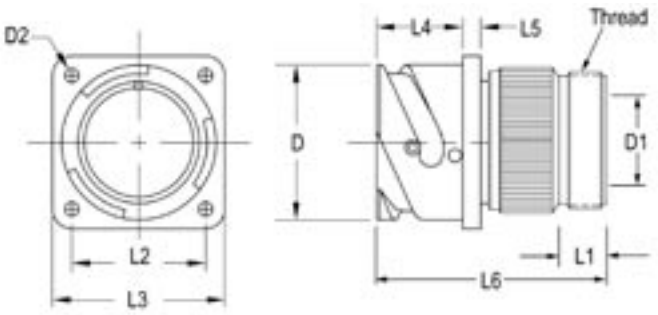
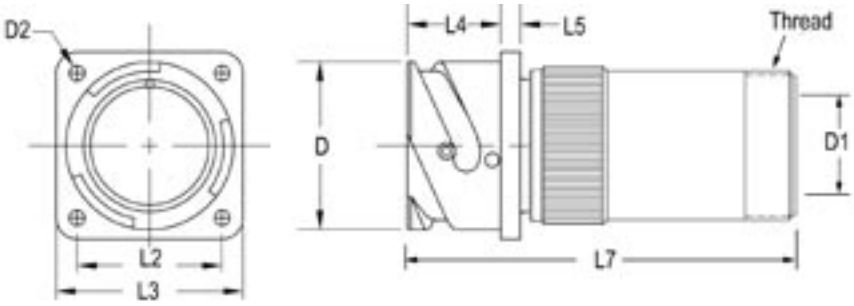


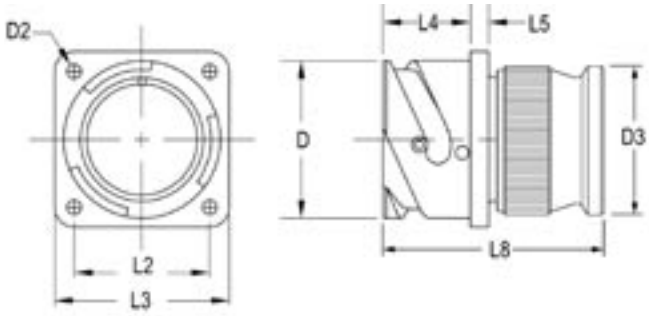
R32RS - / R32RAS

Panel Mount (Front or Rear) Square Flange Receptacle. Same as R32R, except with a short backshell which will accept cable clamps or other accessories. A wire sealing grommet and compression ring are included to seal on the individual wires. If no grommet and compression ring are required, insert the code letter "A" after the R in the part number. Example: R32RAS-.



R32RL - / R32RAL

Panel Mount (Front or Rear) Square Flange Receptacle. Same as R32RS, except for a longer backshell to increase working room for wiring. To eliminate the included wire sealing grommet and compression ring, specify R32RAL-.



R32RZ - / R32RAZ

Panel Mount (Front or Rear) Square Flange Receptacle. Same as R32RS, except that the backshell does not have any accessory threads. This configuration is intended for use with individual wires. To eliminate the wire sealing grommet and compression ring, specify R32RAZ-.

Shell Size	D Max	D1 Typ	D2 +.1-0	D3 Max	L2 ±0.1	L3 ±0.3	L4 +.4 - 0	L5 ±0.2	L6 Max	L7 Max	L8 Max	Thread In Inches	Max. Panel Thickness Rear Mount
10SL	18.2	8.5	3.2	20	18.2	25.4	14.2	2.8	39	67	35	5/8-24UNEF	3.7
14S	24.6	11.7	3.2	24	23	30	14.2	3.2	43	67	35	¾-20UNEF	3.7
16S	27.4	14	3.2	26	24.6	32.5	14.2	3.2	43	67	36	7/8-20UNEF	3.7
16	27.4	14	3.2	26	24.6	32.5	19	3.2	50	77	48	7/8-20UNEF	3.7
18	30.8	17	3.2	29.5	27	35	19	4	52	82	48	1-20UNEF	3.7
20	34.2	21	3.2	33	29.4	38	19	4	52	82	49	1 3/16-18UNEF	3.7
22	37.4	21	3.2	36	31.8	41	19	4	53	82	49	1 3/16-18UNEF	3.7
24	40.9	26	3.7	40	34.9	44.5	20.6	4	53	84	50	1 7/16-18UNEF	5.2
28	46.7	26	3.7	46	39.7	50.8	20.6	4	59	88	50	1 7/16-18UNEF	5.2
32	53.4	32	4.3	51.5	44.5	57	22.2	4	64	88	52	1 ¾-18UNS	6
36	59.6	37	4.3	58	49.2	63.5	22.2	4	64	88	53	2-18UNS	6
40	65.5	45	4.3	64.5	55.5	69.9	22.2	4	79	88	53	2 ¼-16UN	6

All dimensions are in millimeters except when noted.

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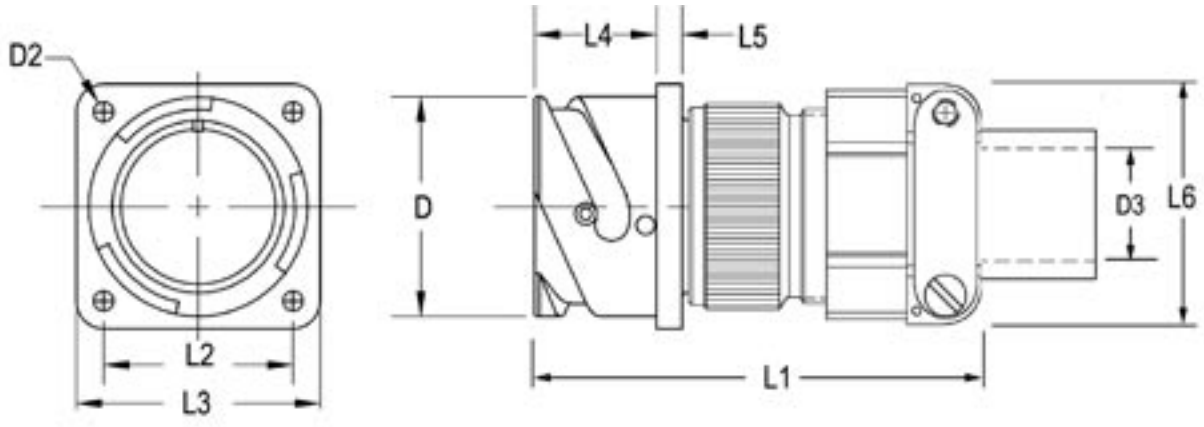
R32F - / R32AF -

Receptacle, square flange for front or rear mount. For use with individual wires - a wire sealing grommet and compression ring are supplied as standard. To eliminate these two components add the code letter "A" before the "F" in the part number. Example: R32AF -

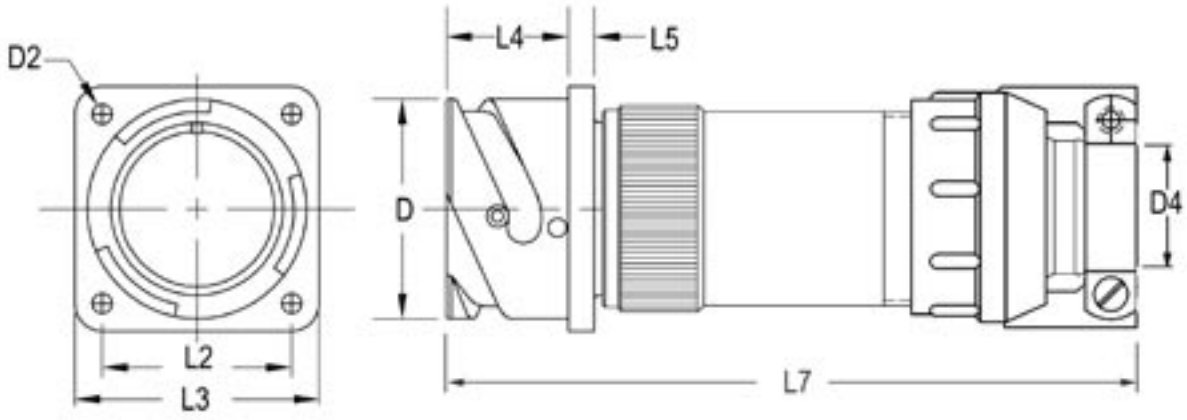


Shell Size	D Max	D2 +.1-0	D3 Max	D4 Cable Range	L1 Approx	L2 ±0.1	L3 ±0.3	L4 +.4 - 0	L5 ± 0.2	L6 Max	L7 Approx	Max. Panel Thickness Rear Mount
10SL	18.2	3.2	5.6	2.4 – 7.9	54	18.2	25.4	14.2	2.8	22	94	3.7
14S	24.6	3.2	8	5.8 – 11	60	23	30	14.2	3.2	27	95	3.7
16S	27.4	3.2	11	8 – 13.5	62	24.6	32.5	14.2	3.2	30	95	3.7
16	27.4	3.2	11	8 – 13.5	69	24.6	32.5	19	3.2	30	104	3.7
18	30.8	3.2	14	9.6 – 15.9	70	27	35	19	4	33	109	3.7
20	34.2	3.2	16	11.3 – 19	70	29.4	38	19	4	35	109	3.7
22	37.4	3.2	16	11.3 – 19	71	31.8	41	19	4	35	109	3.7
24	40.9	3.7	19	15.5 – 23.8	74	34.9	44.5	20.6	4	43	112	5.2
28	46.7	3.7	19	15.5 – 23.8	80	39.7	50.8	20.6	4	43	118	5.2
32	53.4	4.3	24	23.4 – 31.7	85	44.5	57	22.2	4	51	126	6.0
36	59.6	4.3	32	23.4 – 35	87	49.2	63.5	22.2	4	58	130	6.0
40	65.5	4.3	35	29.9 - 41	116	55.5	69.9	22.2	4	65	130	6.0

All dimensions are in millimeters except when noted.

R32CF - / R32ACF -

Receptacle, square flange for front or rear mount. For use with jacketed cable (long backshell standard for additional wire working room). A wire sealing grommet and compression ring are supplied. To eliminate these two components add the code letter "A" before the "CF" in the part number. Example: R32ACF -



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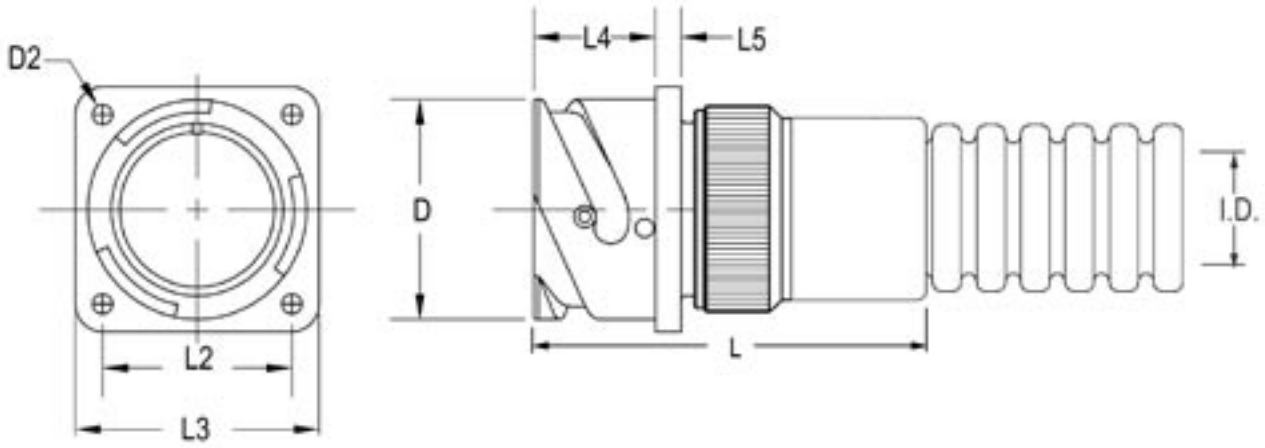
R32PMA - / Square Flange Receptacle - Front Or Rear Mount

This connector configuration allows direct attachment of "PMA" style flexible conduit. The dimensional information below is typical. Any size conduit can be accommodated. Please consult our Technical Sales Department for assistance in proper selection.



Typical Part Number: R32PMA-32-22P-VG2

Chart 1

Shell Size	D Max	D2 +.1-0	L Typical	L2 ±0.1	L3 ±0.3	L4 +.4 - 0	L5 ±0.2	Max Panel Thickness Rear Mount
10SL	18.2	3.2	53	18.2	25.4	14.2	2.8	3.7
14S	24.6	3.2	53	23	30	14.2	3.2	3.7
16S	27.4	3.2	53	24.6	32.5	14.2	3.2	3.7
16	27.4	3.2	58	24.6	32.5	19	3.2	3.7
18	30.8	3.2	58	27	35	19	4	3.7
20	34.2	3.2	58	29.4	38	19	4	3.7
22	37.4	3.2	58	31.8	41	19	4	3.7
24	40.9	3.7	76	34.9	44.5	20.6	4	5.2
28	46.7	3.7	76	39.7	50.8	20.6	4	5.2
32	53.4	4.3	78	44.5	57	22.2	4	6
36	59.6	4.3	81	49.2	63.5	22.2	4	6
40	65.5	4.3	88	55.5	69.9	22.2	4	6

Chart 2

PMA Conduit I.D.	PMA Part Number Suffix
12	AG1
12	AG2
15	AG3
15	MG1
15	MG2
22	MG3
22	VG1
36	VG2
36	VG3
36	VG4
38	VG5
46	LJ1

All dimensions are in millimeters except when noted.

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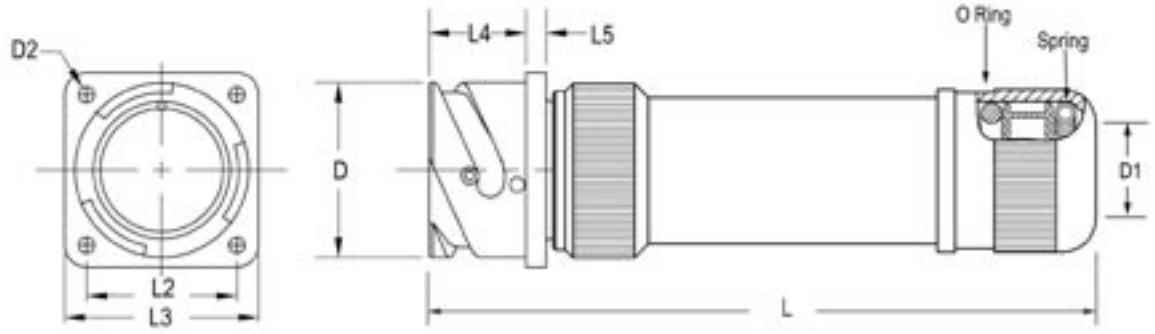
R32RK -

Panel Mount (Front or Rear) Square Flange Receptacle. This square flange receptacle has a dual purpose backshell. It will grip and seal a jacketed cable or flexible conduit or it will terminate overall shield braid on a cable to the backshell by simply swapping the position of the internal spring and O ring (Fig 2). This receptacle is environment proof when mounted on a sealed box or panel provided the proper panel gasket (see page 42) is used. Environmental sealing of any cable or conduit can be accommodated. Dimensions shown are for reference only. Consult our Technical Sales Department for assistance.

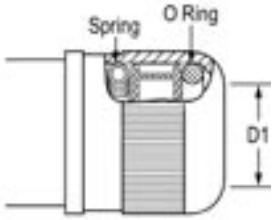
For Jacketed Cable Termination

Fig 1



For Shield Termination

Fig 2



Typical Part Number: R32RK-32-22P-08

Chart 1

Shell Size	D Max	D2 +.1-0	L Approx	L2 ±0.1	L3 ±0.3	L4 +.4 - 0	L5 ±0.2	Max Panel Thickness Rear Mount
10SL	18.2	3.2	110	18.2	25.4	14.2	2.8	3.7
14S	24.6	3.2	110	23	30	14.2	3.2	3.7
16S	27.4	3.2	110	24.6	32.5	14.2	3.2	3.7
16	27.4	3.2	110	24.6	32.5	19	3.2	3.7
18	30.8	3.2	127	27	35	19	4	3.7
20	34.2	3.2	127	29.4	38	19	4	3.7
22	37.4	3.2	133	31.8	41	19	4	3.7
24	40.9	3.7	134	34.9	44.5	20.6	4	5.2
28	46.7	3.7	134	39.7	50.8	20.6	4	5.2
32	53.4	4.3	136	44.5	57	22.2	4	6
36	59.6	4.3	136	49.2	63.5	22.2	4	6
40	65.5	4.3	136	55.5	69.9	22.2	4	6

All dimensions are in millimeters except when noted.

Chart 2

Part Number Suffix	D1 Cable Range
01	1.6 – 3.2
02	3.2 – 6.4
03	6.4 – 9.5
04	9.5 – 12.7
05	12.7 – 15.8
06	15.8 – 19
07	19 – 22
08	22 – 25
09	25– 28.6
10	28.6 – 31
11	31 – 35
12	35 – 38
13	38 – 41
14	41 – 45
15	45 – 48
16	48 – 51

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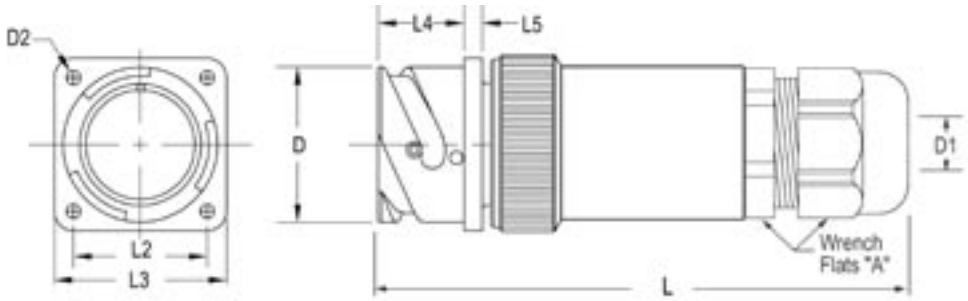
R32SL - Front & Rear Panel Mount Receptacle

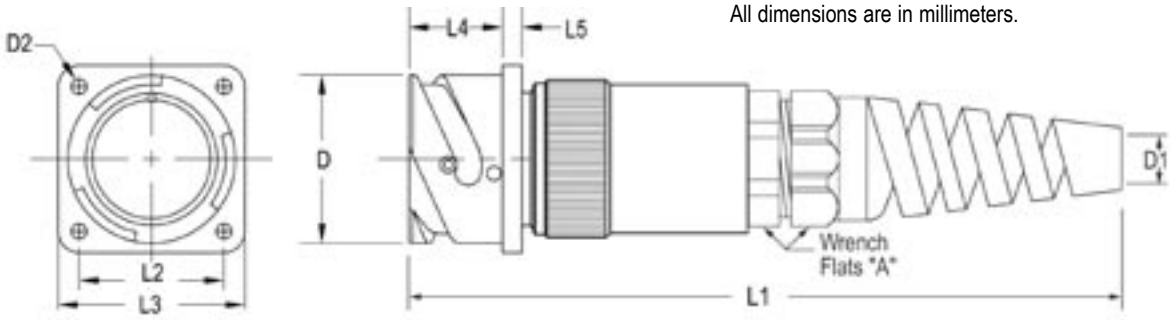
This connector Backshell with it's nylon Strain relief, will grip and seal on any diameter flexible, jacketed cable.



Typical Part Number: R32SL-32-22P-E2

Shell Size	D Max	D2 +.1-0	L Max	L1 Max	L2 ±0.1	L3 ±0.3	L4 +.4 - 0	L5 ±0.2	MaxPanel Thickness Rear Mount
10SL	18.2	3.2	50	67	18.2	25.4	14.2	2.8	3.7
14S	24.6	3.2	50	67	23	30	14.2	3.2	3.7
16S	27.4	3.2	50	67	24.6	32.5	14.2	3.2	3.7
16	27.4	3.2	60	82	24.6	32.5	19	3.2	3.7
18	30.8	3.2	60	82	27	35	19	4	3.7
20	34.2	3.2	60	82	29.4	38	19	4	3.7
22	37.4	3.2	60	82	31.8	41	19	4	3.7
24	40.9	3.7	65	84	34.9	44.5	20.6	4	5.2
28	46.7	3.7	65	88	39.7	50.8	20.6	4	5.2
32	53.4	4.3	65	88	44.5	57	22.2	4	6
36	59.6	4.3	90	108	49.2	63.5	22.2	4	6
40	65.5	4.3	90	108	55.5	69.9	22.2	4	6

All dimensions are in millimeters.



D1 Suffix Code For Cable Range	D1 Cable Range Min - Max	D1 Suffix Code For Cable Range	D1 Cable Range Min - Max	Wrench Flats A
A1	3 - 6.5	A2	2 – 5	15
B1	3.9 - 7.9	B2	2 – 6	19
C1	5 - 10	C2	3 – 7	22
D1	5.9 – 11.9	D2	8.6 – 9	24
E1	10 – 13.9	E2	10.7 – 12.2	27
G1	13.8 – 18	G2	12.2 – 15.6	33
J1	17.9 – 24.9	J2	13 – 20	42
K1	22 – 31.9	K2	20 – 26	53
L1	31.9 – 38	L2	24 – 31	60
M1	37 – 43.9	M2	29 – 35	65

All dimensions are in millimeters except when noted.

R32SLX -

This connector Backshell and clamp is identical to R32SL above, except it has a flexible back end to limit the "bend radius" of the cable.

Typical Part Number: R32SLX-32-22P-E2

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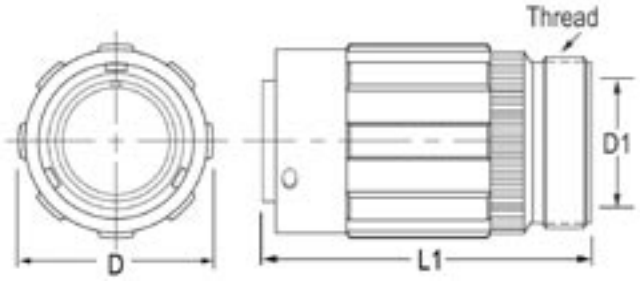
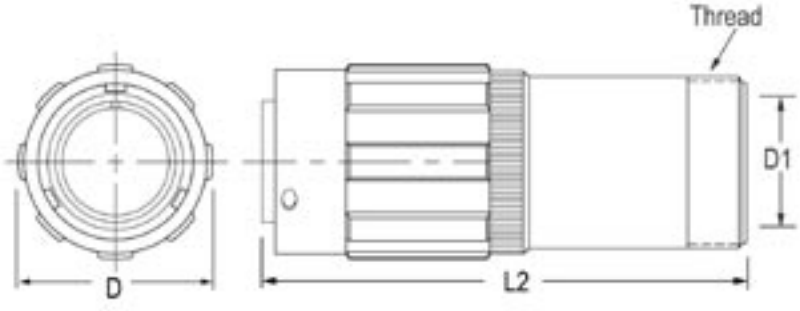


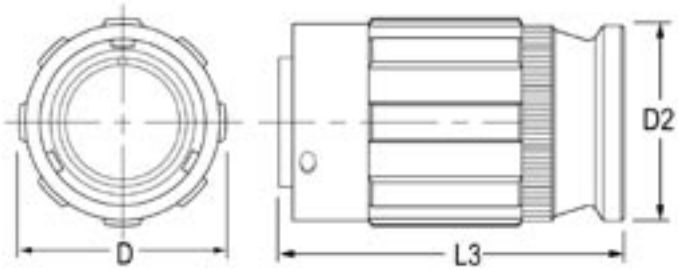
R36RS - / R36RAS - Straight Plug

This is a straight plug suitable for use with individual wires. It includes a backshell with a rear thread to accept accessories, plus a wire sealing grommet and compression ring to seal the individual wires. To eliminate the grommet and compression ring, add the code letter "A" after the R in the part number. Example: R36RAS -.



R36RL - / R36RAL - Straight Plug

This is the same straight plug as R36RS above, except that it has a longer backshell to allow more working room for wiring. To eliminate the included wire sealing grommet and compression ring, add the code letter "A" after the R in the part number. Example: R36RAL -.



R36RZ - / R36RAZ - Straight Plug

This configuration is the same as R36RS except that the backshell has no rear threads. This configuration is intended for use with individual wires only. To eliminate the included grommet and compression ring, specify R36RAZ -.

Shell Size	D Max	D1 Typ	D2 Max	L1 Approx	L2 Approx	L3 Approx	Thread In Inches
10SL	25	8.5	20	39	67	35	5/8-24UNEF
14S	32	11.7	24	43	67	35	¾-20UNEF
16S	36	14	26	43	67	36	7/8-20UNEF
16	36	14	26	50	77	48	7/8-20UNEF
18	40	17	29.5	52	80	48	1-20UNEF
20	43	21	33	52	80	49	1 3/16-18UNEF
22	46	21	36	53	80	49	1 3/16-18UNEF
24	50	26	40	53	80	50	1 7/16-18UNEF
28	57	26	46	59	85	50	1 7/16-18UNEF
32	64	32	51.5	64	87	52	1 ¾-18UNS
36	70	37	58	64	87	53	2-18UNS
40	76	45	64.5	79	87	53	2 ¼-16UN

All dimensions are in mm except where noted.

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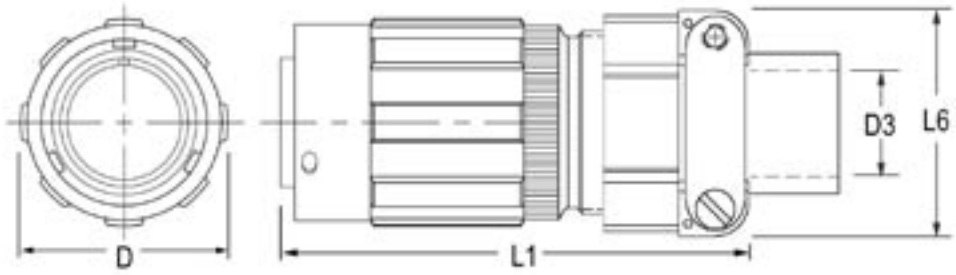
R36F - / R36AF Straight Plug

This is one of the most common plug connector configurations. It utilizes the popular MS3057A Series Military Cable Clamp and bushings for wire strain relief (see page 39). This backshell and clamp are intended for use with individual wires. A wire sealing grommet and compression ring are included. If no grommet and compression ring are required, insert the code letter "A" before the F in the part number. Example: R36AF -.

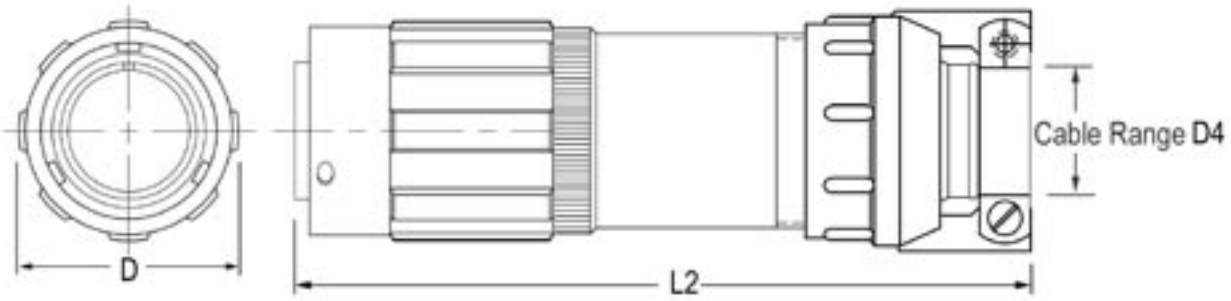


Shell Size	D Max	D3 Max	D4 Cable Range	L1 Approx	L2 Approx	L6 Max
10SL	25	5.6	2.4 – 7.9	54	104	22
14S	32	8	5.8 – 11	60	105	27
16S	36	11	8 – 13.5	62	105	30
16	36	11	8 – 13.5	70	110	30
18	40	14	9.6 – 15.9	71	125	33
20	43	16	11.3 – 19	71	125	35
22	46	16	11.3 – 19	72	125	35
24	50	19	15.5 – 23.8	75	127	43
28	57	19	15.5 – 23.8	80	128	43
32	64	24	23.4 – 31.7	85	145	51
36	70	32	23.4 – 35	87	145	58
40	76	35	29.9 - 41	116	145	65

All dimensions are in mm except where noted.

R36CF - / R36ACF Straight Plug

This straight plug connector has a backshell and a MS3057C cable clamp to grip and seal on jacketed cables (see page 39). A wire sealing grommet and compression ring are included to seal the individual wires. If no wire sealing grommet and compression ring are required, insert the code letter "A" before the CF in the part number. Example: R36ACF-.



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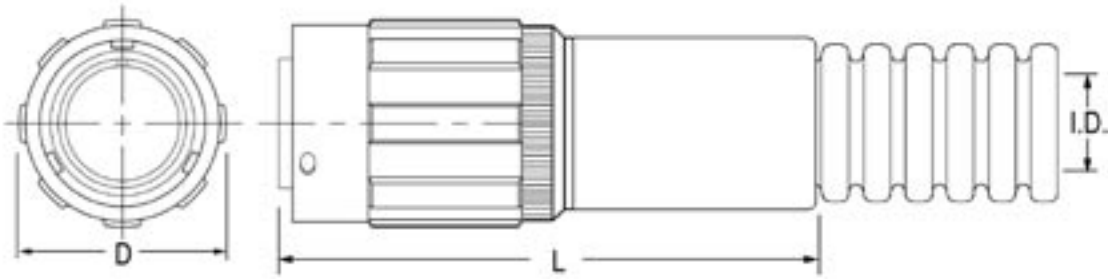
R36PMA - / Straight Plug

This plug connector configuration allows direct attachment of "PMA" style flexible conduit. The dimensional information below is "typical". Any conduit size* can be accommodated. Please consult our Technical Sales Department for assistance in proper selection.



Typical Part Number: R36PMA-32-22P-VG2

Chart 1

Shell Size	D Max	L Max
10SL	25	70
14S	32	70
16S	36	70
16	36	84
18	40	84
20	43	84
22	46	85
24	50	100
28	57	105
32	64	105
36	70	110
40	76	140

Chart 2

PMA Conduit I.D.*	PMA Part Number Suffix
12	AG1
12	AG2
15	AG3
15	MG1
15	MG2
22	MG3
22	VG1
36	VG2
36	VG3
36	VG4
38	VG5
46	LJ1

All dimensions are in mm except where noted.

**For assistance in proper conduit size and termination or for terminating other conduit types, consult our Engineering Department.*

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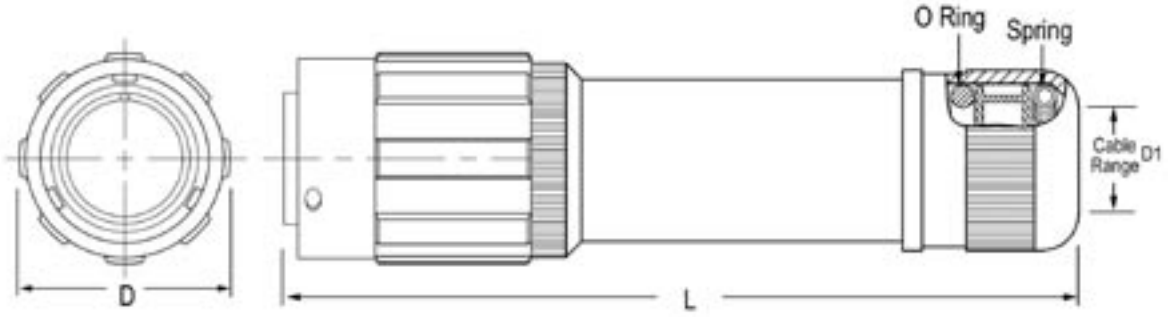
R36RK - / Straight Plug

This plug connector has a dual purpose backshell. It will grip and seal a jacketed cable or flexible conduit, or it will terminate overall shield braid on a cable to the backshell by simply swapping the position of the internal spring and "O" ring (Fig 2). Environmental sealing of any cable or conduit can be accommodated. Dimensions shown are for reference only. Consult our Technical Sales Department for assistance.

For Jacketed Cable Termination

Fig 1



Typical Part Number: R36RK-32-22P-08

For Shield Termination

Fig 2

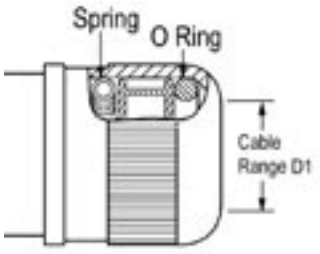


Chart 1

Shell Size	D Max	L Approx
10SL	25	110
14S	32	110
16S	36	110
16	36	110
18	40	130
20	43	130
22	46	135
24	50	135
28	57	135
32	64	136
36	70	136
40	76	136

Chart 2

Part Number Suffix	D1 Cable Range
01	1.6 - 3.2
02	3.2 - 6.4
03	6.4 - 9.5
04	9.5 - 12.7
05	12.7 - 15.8
06	15.8 - 19
07	19 - 22
08	22 - 25
09	25 - 28.6
10	28.6 - 31
11	31 - 35
12	35 - 38
13	38 - 41
14	41 - 45
15	45 - 48
16	48 - 51

All dimensions are in mm except where noted.

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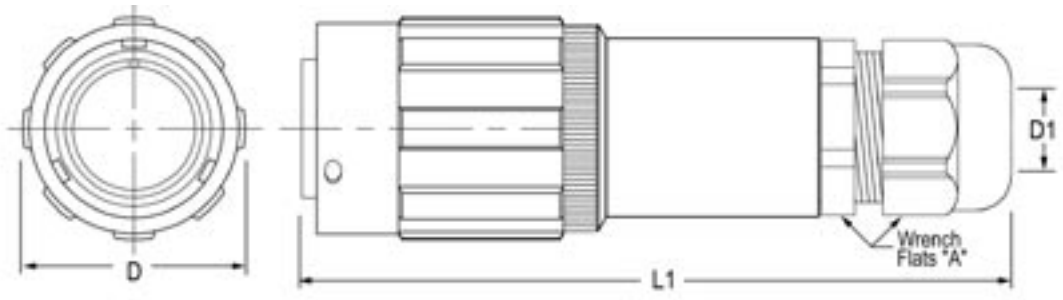
R36SL- / Straight Plug

This plug connector backshell with it's nylon strain relief will grip and seal on any diameter flexible, jacketed cable.



Typical Part Number: R36SL-32-22P-E2

Shell Size	D Max	L1 Approx	L2 Approx
10SL	25	100	150
14S	32	100	150
16S	36	100	150
16	36	110	160
18	40	115	165
20	43	115	165
22	46	115	165
24	50	120	170
28	57	120	170
32	64	130	180
36	70	135	185
40	76	135	185

D1 Suffix Code For Cable Range	D1 Cable Range Min	Max
A1	3 – 6.5	
B1	3.9 – 7.9	
C1	5 – 10	
D1	5.9 – 11.9	
E1	10 – 13.9	
G1	13.8 – 18	
J1	17.9 – 24.9	
K1	22 – 31.9	
L1	31.9 – 38	
M1	36.9 – 43.9	

D1 Suffix Code For Cable Range	D1 Cable Range Min.	Max
A2	2 - 5	
B2	2 - 6	
C2	3 - 7	
D2	8.6 - 9	
E2	10.7 - 12.2	
G2	12.2 - 15.6	
J2	13 - 20	
K2	20 - 26	
L2	24 - 31	
M2	29 - 35	

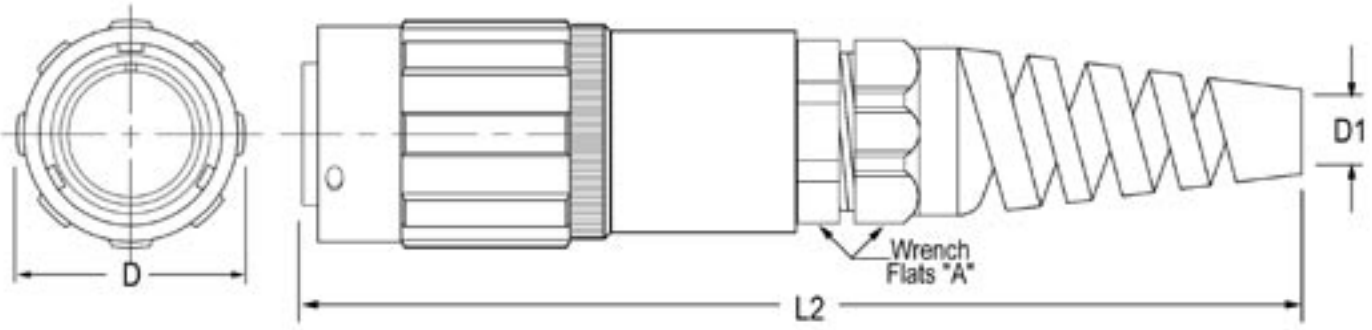
Wrench Flats A
15
19
22
24
27
33
42
53
60
65

All dimensions are in mm except where noted.

R36SLX- / Straight Plug

This plug connector is the same as R36SL except that it has a "bend limiting" back end to protect the cable/connector junction during repeat flexing.

Typical Part Number: R36SLX-32-22P-E2



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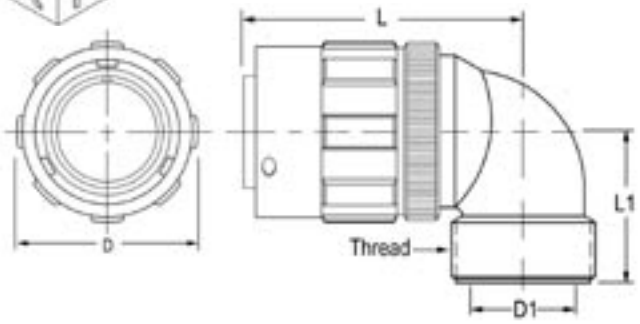
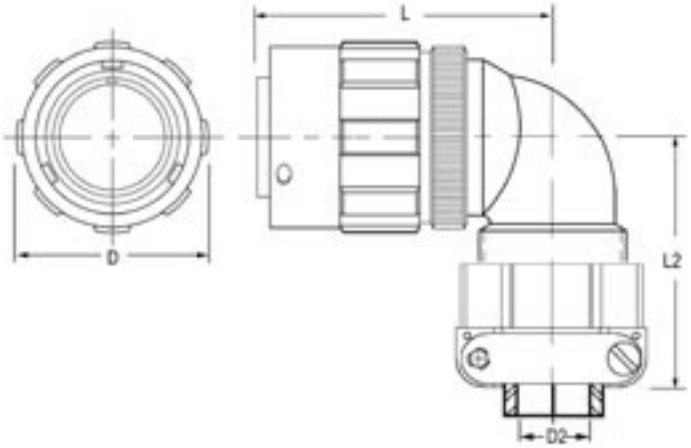


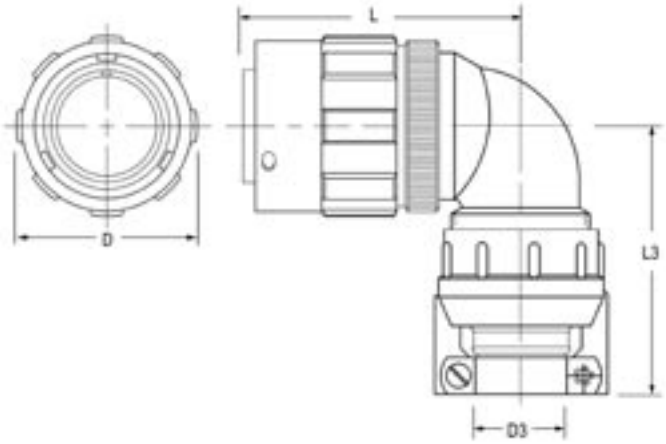
R38R- / R38AR-
Right Angle Plug

For use with individual wires. The threaded back end readily accepts cable clamps or other accessories. A wire sealing grommet and compression ring are included for moisture proofing. To eliminate the wire sealing grommet and compression ring insert the code letter "A" before the "R" in the part number. Example: R38AR-.



R38F- / R38AF-

Same as R38R except it has a MS3057A cable clamp, and rubber bushing (page 39). Suitable for use with individual wires. A wire sealing grommet and compression ring are included. To eliminate the wire sealing grommet and compression ring, insert the code letter "A" before the "F" in the part number. Example: R38AF-.



R38CF- / R38ACF-

Same as R38R except it has a MS3057C cable clamp (page 39), to grip and seal a jacketed cable. To eliminate the included wire sealing grommet and compression ring, insert the letter "A" before the "CF" in the part number. Example: R38ACF-.

Shell Size	D Max	D1 Max	D2 Max	D3 Cable Range	L Max	L1 Max	L2 Max	L3 Approx	Thread In Inches
10SL	25	10.7	5.6	2.4 – 7.9	38	25	42	52	5/8-24UNEF
14S	32	11.7	8	5.8 – 11	40	26	42	54	¾-20UNEF
16S	36	14.9	11	8 – 13.5	43	28	45	55	7/8-20UNEF
16	36	14.9	11	8 – 13.5	52	28	45	55	7/8-20UNEF
18	40	17.4	14	9.6 – 15.9	54	30	49	60	1-20UNEF
20	43	20.5	16	11.3 – 19	60	32	51	62	1 3/16-18UNEF
22	46	23.2	16	11.3 – 19	60	33	52	62	1 3/16-18UNEF
24	50	26	19	15.5 – 23.8	64	36	58	69	1 7/16-18UNEF
28	57	28.9	19	15.5 – 23.8	64	38	60	70	1 7/16-18UNEF
32	64	36.7	24	23.4 – 31.7	70	45	66	83	1 ¾-18UNS
36	70	42.8	32	23.4 – 35	73	48	70	90	2-18UNS
40	76	48.8	35	29.9 – 41	76	52	88	94	2 ¼-16UN

All dimensions are in mm except where noted.

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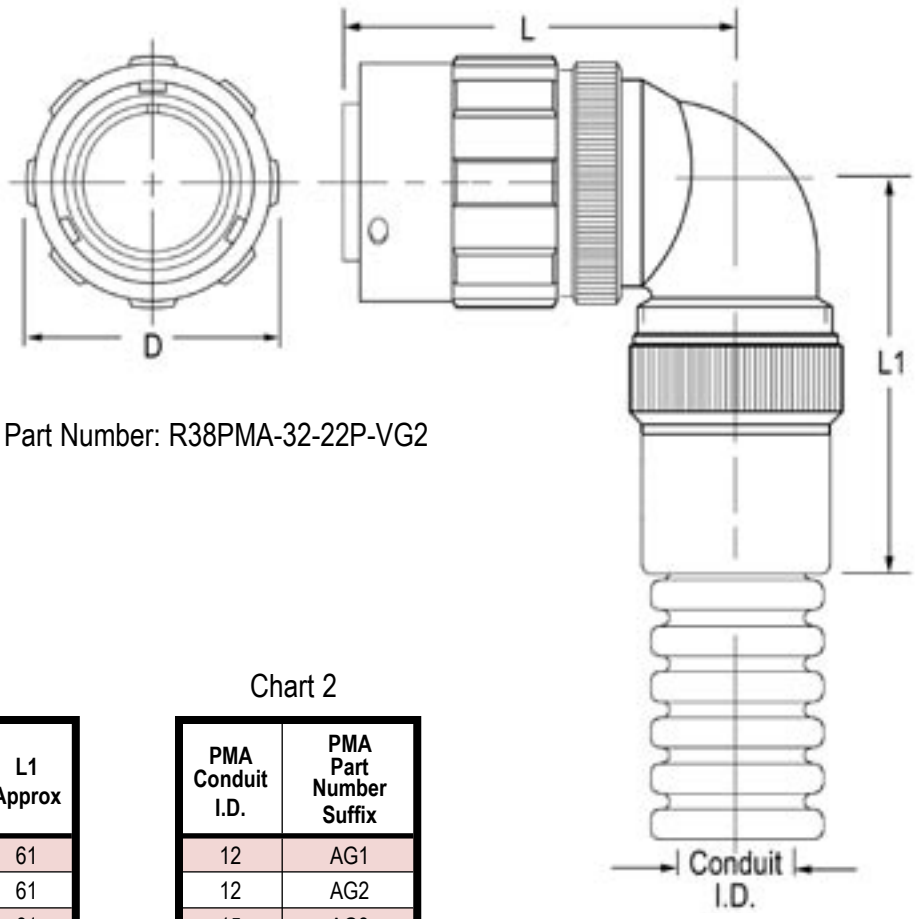
R38PMA-
Right Angle Plug

This ninety degree plug connector configuration allows direct attachment of "PMA" style flexible conduit. The information below is "typical". Any conduit size can be accommodated. Please consult our Technical Sales Department for assistance in proper selection.
R^3 can configure any connector to accommodate all types and sizes of flexible or rigid conduit.



Typical Part Number: R38PMA-32-22P-VG2

Chart 1

Shell Size	D Max	L Max	L1 Approx
10SL	25	38	61
14S	32	40	61
16S	36	43	61
16	36	52	61
18	40	54	65
20	43	60	70
22	46	60	71
24	50	64	88
28	57	64	90
32	64	70	107
36	70	73	112
40	76	76	112

Chart 2

PMA Conduit I.D.	PMA Part Number Suffix
12	AG1
12	AG2
15	AG3
15	MG1
15	MG2
22	MG3
22	VG1
36	VG2
36	VG3
36	VG4
38	VG5
46	LJ1

All dimensions are in mm except where noted.

We can accommodate PMA or any other flexible conduit. Please contact our Technical Sales Department for assistance.

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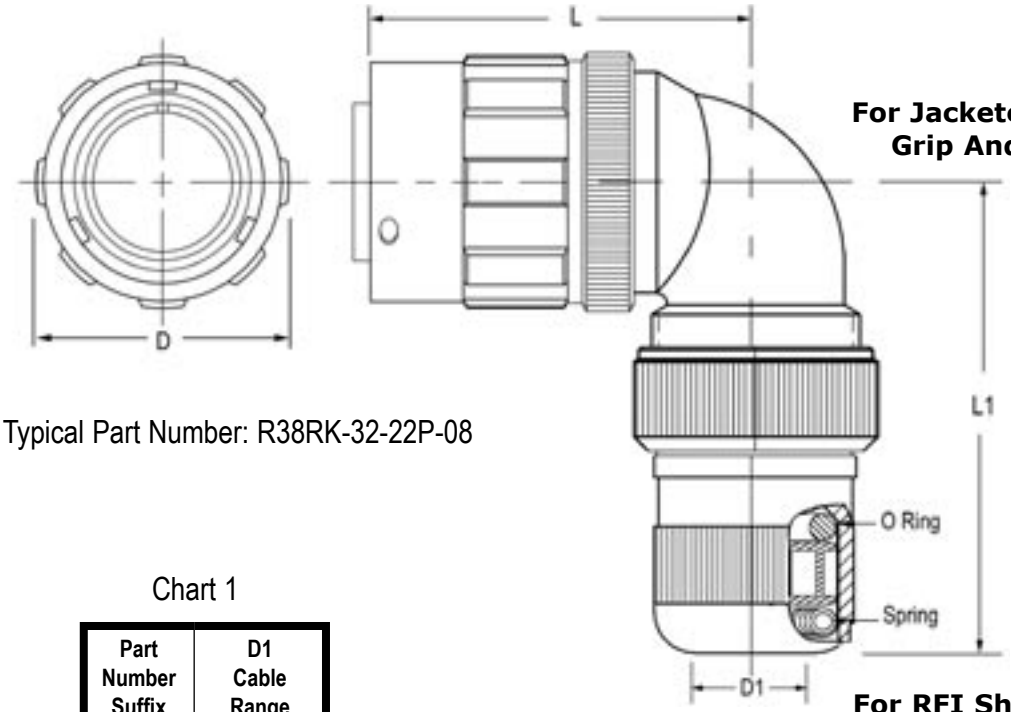
R38RK- Right Angle Plug

This ninety degree plug connector has a dual purpose backshell. It will grip and seal a jacketed cable or flexible conduit or it will terminate overall shield braid on a cable to the backshell by simply swapping the position of the internal spring and O ring (Fig 2). Environmental sealing of any cable or conduit can be accommodated. Dimensions shown are for reference only.
Consult our Technical Sales Department for assistance.



For Jacketed Cable Grip And Seal

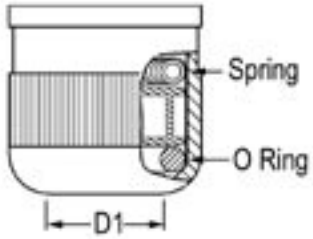
Fig 1

Typical Part Number: R38RK-32-22P-08

Chart 1

Part Number Suffix	D1 Cable Range
01	1.6 – 3.2
02	3.2 – 6.4
03	6.4 – 9.5
04	9.5 – 12.7
05	12.7 – 15.8
06	15.8 – 19
07	19 – 22
08	22 – 25
09	25 – 28.6
10	28.6 – 31
11	31 – 35
12	35 – 38
13	38 – 41
14	41 – 45
15	45 – 48
16	48 - 51

All dimensions are in mm except where noted.



For RFI Shield Termination

Fig 2

Chart 2

Shell Size	D Max	L Max	L1 Max
10SL	25	38	80
14S	32	40	80
16S	36	43	83
16	36	52	83
18	40	54	85
20	43	60	87
22	46	60	88
24	50	64	90
28	57	64	93
32	64	70	100
36	70	73	103
40	76	76	107

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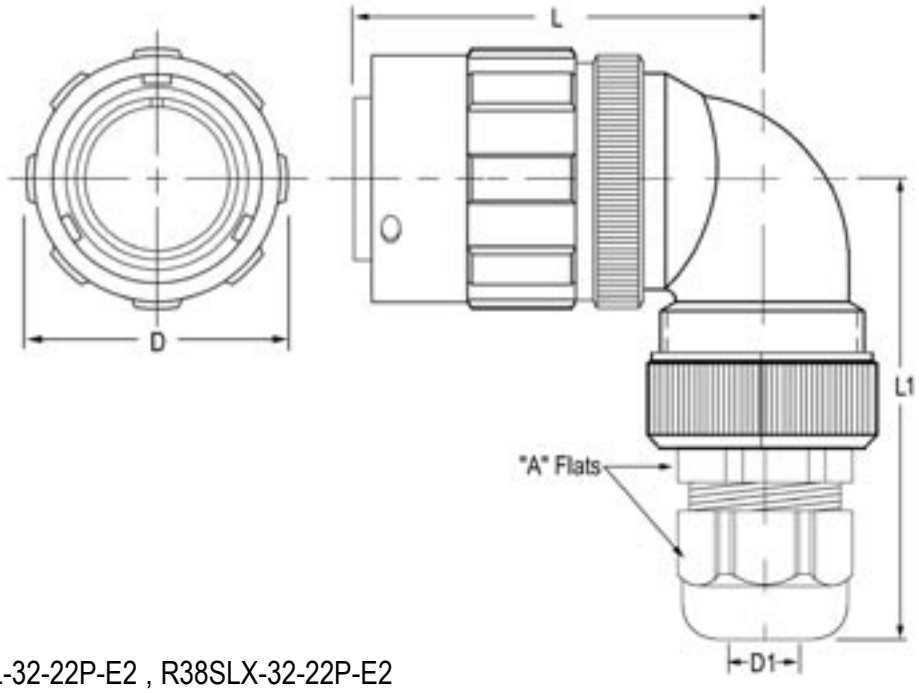
R38SL-
Right Angle Plug

This connector has a plastic grip and seal suitable for use with jacketed cables. Any cable diameter can be accommodated. A wire sealing grommet and compression ring are included. Please confer with our Technical Sales Department for assistance in proper selection.

Chart 1

Shell Size	D Max	L Max	L1 Max	L2 Max
10SL	25	38	87	104
14S	32	40	89	106
16S	36	43	90	107
16	36	52	90	107
18	40	54	93	115
20	43	60	94	116
22	46	60	96	118
24	50	64	99	121
28	57	64	105	124
32	64	70	108	130
36	70	73	110	133
40	76	76	115	135



Typical Part Numbers: R38SL-32-22P-E2 , R38SLX-32-22P-E2

R38SLX-
Right Angle Plug

Same as R38SL, except that the cable exit port is reinforced with a bend limiter to extend cable life in the event of continuous flexing.

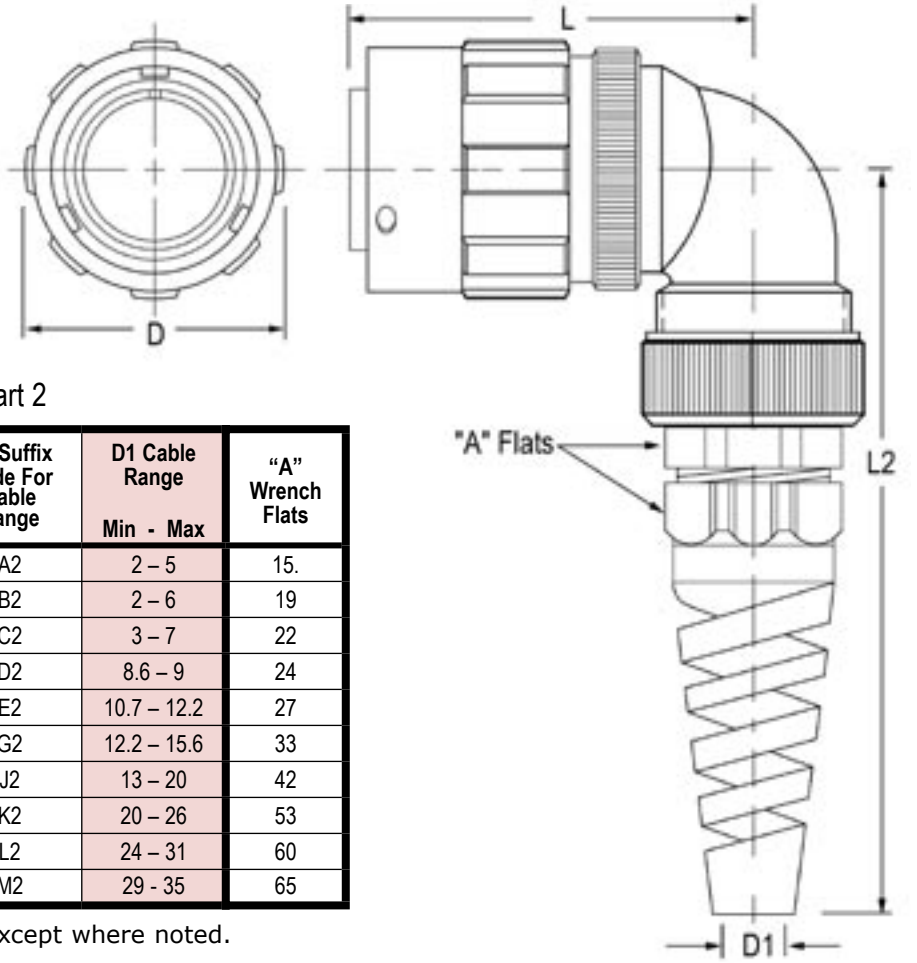


Chart 2

D1 Suffix Code For Cable Range	D1 Cable Range Min - Max	D1 Suffix Code For Cable Range	D1 Cable Range Min - Max	"A" Wrench Flats
A1	3 – 6.5	A2	2 – 5	15.
B1	3.9 – 7.9	B2	2 – 6	19
C1	5 – 10	C2	3 – 7	22
D1	5.9 – 11.9	D2	8.6 – 9	24
E1	10 – 13.9	E2	10.7 – 12.2	27
G1	13.8 – 18	G2	12.2 – 15.6	33
J1	17.9 – 24.9	J2	13 – 20	42
K1	22 – 31.9	K2	20 – 26	53
L1	31.9 – 38	L2	24 – 31	60
M1	37 – 43.9	M2	29 - 35	65

All dimensions are in mm except where noted.

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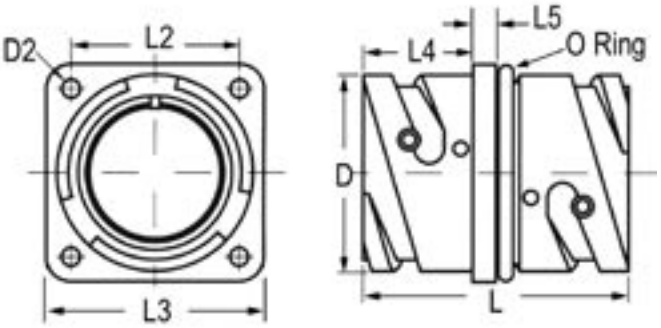
R3TB

R3TB-
Through Bulkhead Receptacles

These receptacles are intended for connecting cables through a wall or bulkhead. They allow signal or power to pass while maintaining a water tight seal and gender integrity for operator safety. Mounting holes are threaded for ease of installation. Contacts are double ended - male (pins) on one side, female (sockets) on the other.

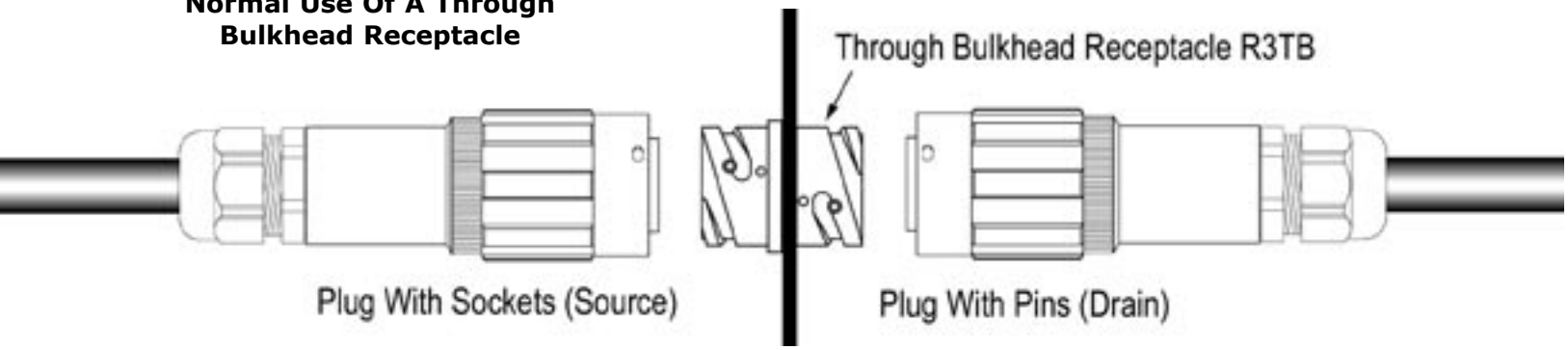


Typical Part Number: R3TB-32-22PS

Shell Size	D Max	D2 Thread	L ±0.3	L2 ±0.1	L3 ±0.3	L4 +0.4-0	L5 ±0.2	Max Panel Thickness O Ring Side
10SL	18.2	M4	37.5	18.2	25.4	14.2	2.8	7.2
14S	24.6	M4	37.5	23	30	14.2	3.2	7.2
16S	27.4	M4	37.5	24.6	32.5	14.2	3.2	7.2
16	27.4	M4	50.6	24.6	32.5	19	3.2	7.5
18	30.8	M4	51.4	27	35	19	4	7.5
20	34.2	M4	51.4	29.4	38	19	4	7.5
22	37.4	M4	51.4	31.8	41	19	4	7.5
24	40.9	M4	51.4	34.9	44.5	20.6	4	7.5
28	46.7	M5	51.4	39.7	50.8	20.6	4	7.5
32	53.4	M5	51.4	44.5	57	22.2	4	7.5
36	59.6	M5	51.4	49.2	63.5	22.2	4	7.5
40	65.5	M5	51.4	55.5	69.9	22.2	4	7.5

All dimensions are in mm except where noted.

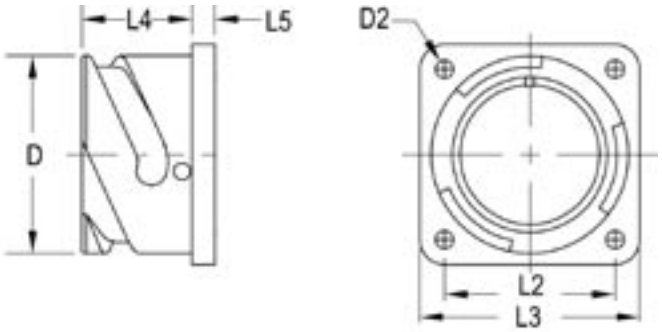
Normal Use Of A Through Bulkhead Receptacle



R3DM

R3DM-
Dummy Receptacles

These receptacles have no insulator or contacts. They are used to stow cables with plugs mounted on them to preclude damage caused by dropping or dragging when they are not mated to their counter part receptacle.
With the proper sized gasket, Dummy Receptacles maintain their water resistance. Caps are available (see page 38).



Shell Size	D Max	D2 +1 -0	L2 ±0.1	L3 ±0.3	L4 +0.4-0	L5 ±0.2
10SL	18.2	3.2	18.2	25.4	14.2	2.8
14S	24.6	3.2	23	30	14.2	3.2
16S	27.4	3.2	24.6	32.5	14.2	3.2
16	27.4	3.2	24.6	32.5	19	3.2
18	30.8	3.2	27	35	19	4
20	34.2	3.2	29.4	38	19	4
22	37.4	3.2	31.8	41	19	4
24	40.9	3.7	34.9	44.5	20.6	4
28	46.7	3.7	39.7	50.8	20.6	4
32	53.4	4.3	44.5	57	22.2	4
36	59.6	4.3	49.2	63.5	22.2	4
40	65.5	4.3	55.5	69.9	22.2	4

All dimensions are in mm except where noted.

Typical Part Number: R3DM-20 (where “20” is the shell size)

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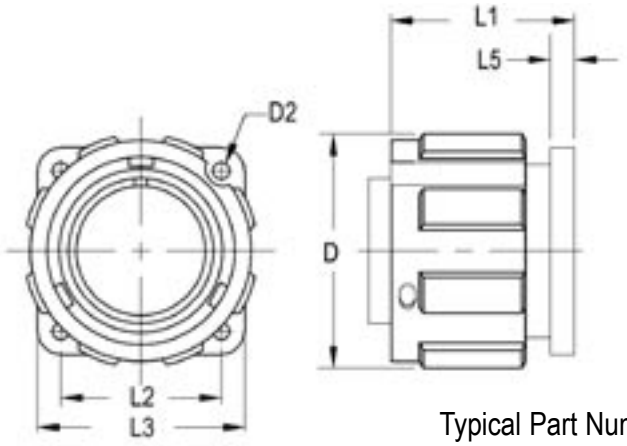
R36PP-
Panel Plugs

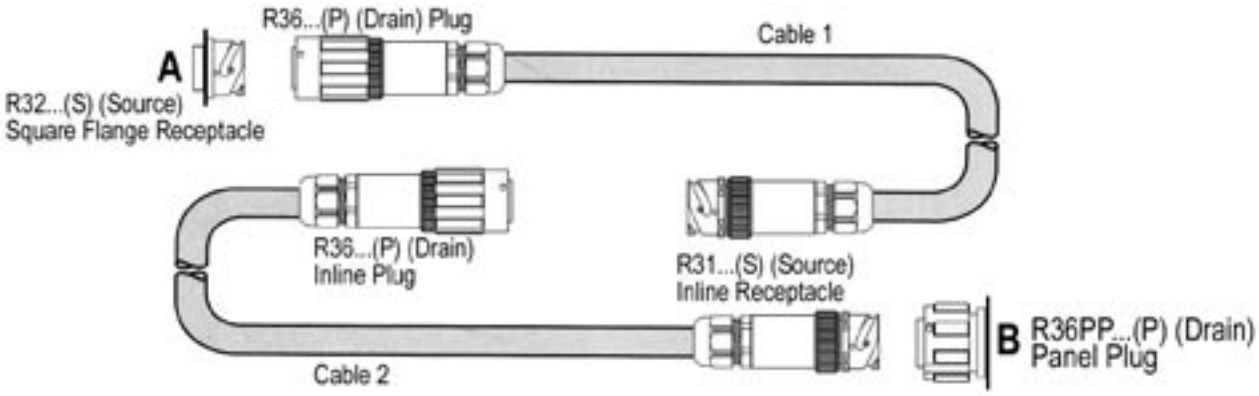
Panel plugs are used to maintain gender integrity for operator safety when joining or "daisy chaining" two identical cables.



Typical Part Number: R36PP-20-4P

Schematic -
Typical "Daisy Chain" Hook-up

To run from point **"A"** to point **"B"**. It is sometimes necessary to use identical cables to extend a run. For safety, the current "source" is always female or socket contacts (S) as they are shrouded and cannot be touched by the operator. The male contact side is also identified by (P) or "drain".



Shell Size	D Max	D2 +.1 -0	L1 Approx	L2 ±0.1	L3 ±0.3	L5 ±0.2
10SL	25	3.2	29	18.2	25.4	2.8
14S	32	3.2	30	23	30	3.2
16S	36	3.2	30	24.6	32.5	3.2
16	36	3.2	37	24.6	32.5	3.2
18	40	3.2	37	27	35	4
20	43	3.2	38	29.4	38	4
22	46	3.2	38	31.8	41	4
24	50	3.7	39	34.9	44.5	4
28	57	3.7	39	39.7	50.8	4
32	64	4.3	40	44.5	57	4
36	70	4.3	42	49.2	63.5	4
40	76	4.3	45	55.5	69.9	4

All dimensions are in mm except where noted.

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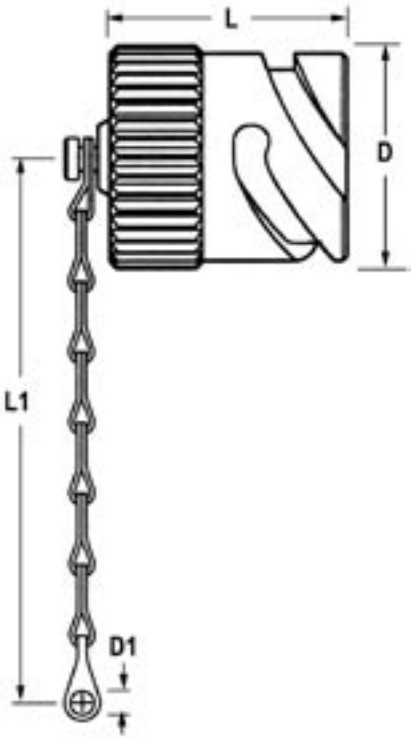
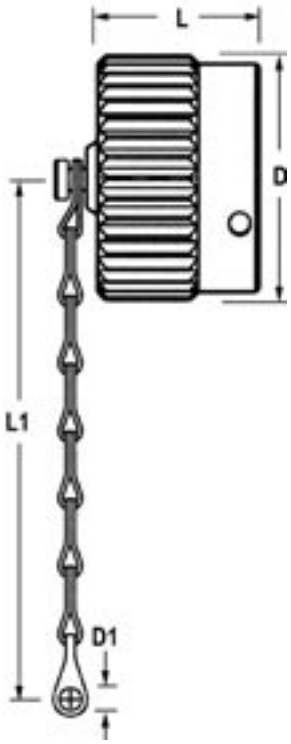


R3CP-
Caps For Plugs

CP Series caps with tethers are used on R3 Plugs- R36, R38 and R36PP.

Shell Sizes	Part Number	D Max	D1 ±.25	L Max	L1 Approx
10SL	R3CP10SL	21	4.4	24	127
14S	R3CP14S	28	4.4	24	127
16S	R3CP16S	30	4.4	24	127
16	R3CP16	30	4.4	32	127
18	R3CP18	34	4.4	32	127
20	R3CP20	37	4.8	32	140
22	R3CP22	40	4.8	32	140
24	R3CP24	44	4.8	32	140
28	R3CP28	50	5.6	32	190
32	R3CP32	56	5.6	32	190
36	R3CP36	63	5.6	32	190
40	R3CP40	68	5.6	32	190

All dimensions are in mm except where noted.



R3CR-
Caps For Receptacles

CR Series caps with tethers are used on R3 Receptacles- R31, R32, R3TB and R3DM.

Shell Size	Part Number	D Max	D1 ±.25	L Max	L1 Approx
10SL	R3CR10SL	24	4.4	16.5	127
14S	R3CR14S	31	4.4	16.5	127
16S	R3CR16S	33	4.4	16.5	127
16	R3CR16	33	4.4	21	127
18	R3CR18	38	4.4	21	127
20	R3CR20	41	4.8	21	127
22	R3CR22	44	4.8	21	127
24	R3CR24	48	4.8	21	127
28	R3CR28	55	5.6	21	190
32	R3CR32	61	5.6	21	190
36	R3CR36	68	5.6	21	190
40	R3CR40	73	5.6	21	190

All dimensions are in mm except where noted.

These caps are available in Aluminum with a black hard coat finish (standard) and in black or olive drab plastic. Consult our Technical Sales Department for other materials and finishes.

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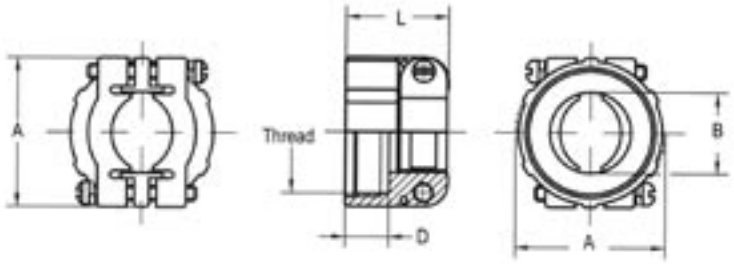
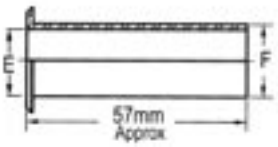
MS 3057A-
Cable Clamps And Bushings

This is the most popular cable clamp for gripping a jacketed cable or individual wire bundle. It does **not** provide a moisture seal. The AN 3420-X Series neoprene bushings will help reduce diameter "B". These bushings telescope within each other to further reduce diameter "B".



AN3420-X Bushing

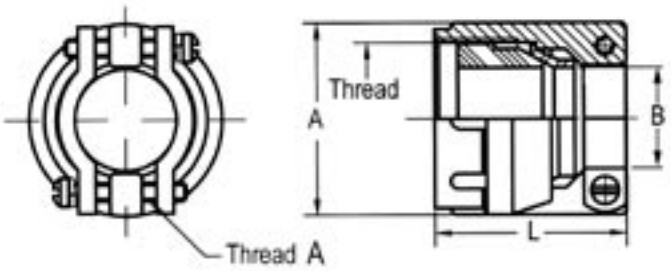


Shell Size	R3 & MS Part Number	Used with Bushing Number	A Max	B Max	D Max	E Max	F Max	L Max	Thread Class 2 B In Inches
10SL	3057-4A	AN 3420-4	22	8	10.5	5.6	8	21	.625-24UNEF
14S	3057-6A	AN 3420-6	27	11	10.5	8	11	22	.75-20UNEF
16-16S	3057-8A	AN 3420-8	30	14	10.5	11	14	24	.875-20UNEF
18	3057-10A	AN 3420-10	33	16	10.5	14	16	24	1-20UNEF
20-22	3057-12A	AN 3420-12	35	19	10.5	16	19	24	1.1875-18UNEF
24-28	3057-16A	AN 3420-16	43	24	10.5	19	23	26	1.4375-18UNEF
32	3057-20A	AN3420-20	51	32	12.5	24	31	28	1.750-18UNS
36	3057-24A	AN 3420-24	58	35	14	32	35	29	2-18UNS
40	3057-28A	AN3420-28	65	41	14	35	41	43	2.25-16UN

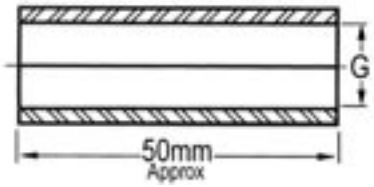
All dimensions are in mm except where noted.

MS 3057C-
Cable Clamps And Bushings

This cable clamp will grip and provide a moisture seal on a smooth jacketed cable, conduit or hose. Neoprene bushings (AN 3420-XXA) are available to reduce inner diameter "B". These bushings are made to telescope within each other.



AN3420-XXA Bushing



Shell Size	R3 & MS Part Number	A ±0.4	Range B Min	Range B Max	Thread Class 2 B In Inches	Thread A Class 2 A In Inches	L +0.5-0	AN3420A Bushing Number	AN 3420-XXA G Max
10SL	MS 3057-4C	22.6	2.4	7.9	.625-24 UNEF	6-32NC	32.3	AN 3420-4A	5.56
14S	MS 3057-6C	25.8	5.8	11	.75-20UNEF	6-32NC	32.3	AN 3420-6A	7.93
16 & 16S	MS 3057-8C	28	8	13	.875-20UNEF	6-32NC	32.3	AN 3420-8A	11.1
18	MS 3057-10C	31	9.6	15.9	1-20UNEF	6-32NC	35.3	AN 3420-10A	11.1
20 & 22	MS 3057-12C	37	11.3	19	1.1875-18UNEF	8-32NC	35.7	AN 3420-12A	13.74
24 & 28	MS 3057-16C	42	15.5	23.8	1.4375-18UNEF	8-32NC	38.5	AN 3420-16A	19
32	MS 3057-20C	54	23.4	31.7	1.750-18UNS	.25-20NC	44.8	AN 3420-20A	23.8
36	MS 3057-24C	57	32.4	35	2-18UNS	.25-20NC	51.6	AN3420-24A	28.5
40	MS 3057-28C	63.5	29.9	41	2.250-16UN	.25-20NC	51.6	AN 3420-28A	31.75

All dimensions are in mm except where noted.

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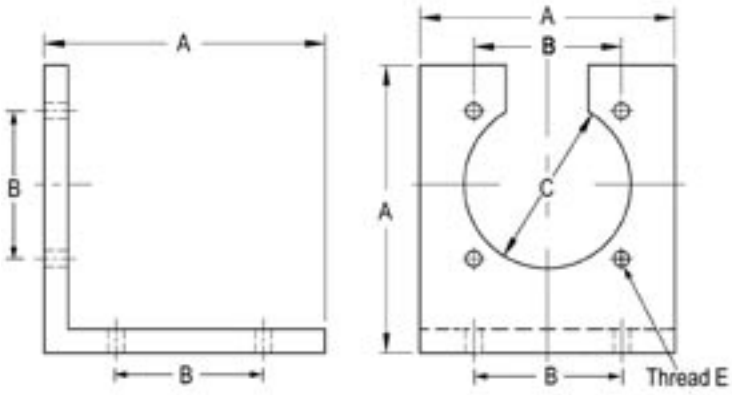
R3RAB-
Right Angle Mounting Brackets

These aluminum mounting brackets allow horizontal installation of square flange R32 receptacles (pages 21-26), and R36PP panel plugs (page 37). They are available in aluminum, black anodized as standard. For other materials and finishes, please contact our Sales Department. Mounting holes "E" are threaded for ease of connector installation.

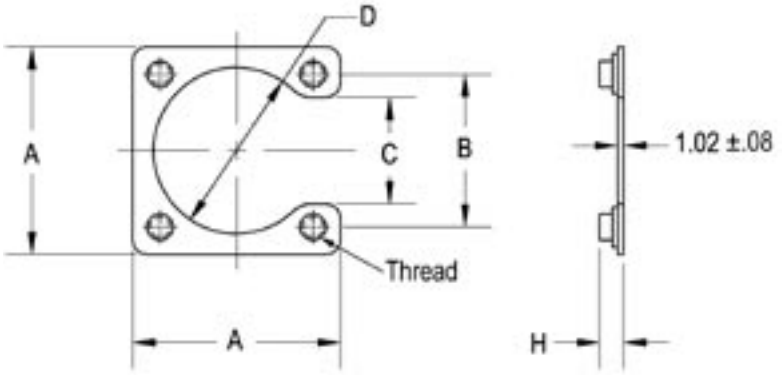


Part Number	Shell Size	A ±0.5	B ±0.1	C ±0.1	E Thread
R3RAB-10SL	10SL	38	18.2	17.5	M4
R3RAB-14S	14S	47	23	23.8	M4
R3RAB-16	16,16S	47	24.6	26.2	M4
R3RAB-18	18	54	27	29.5	M4
R3RAB-20	20	57	29.4	33.3	M4
R3RAB-22	22	57	31.8	36.5	M4
R3RAB-24	24	60	34.9	40.3	M4
R3RAB-28	28	67	39.7	47.6	M5
R3RAB-32	32	70	44.5	52.3	M5
R3RAB-36	36	76	49.2	60.3	M5
R3RAB-40	40	83	55.5	65.5	M5

All dimensions are in mm except where noted.

R3NP-
Nutplates

Nutplates are used in lieu of individual screws and nuts to simplify mounting of square flange receptacles R32- or panel plug R36PP. Screws are sold separately. The captive threaded lock nuts hold the connector securely.



Part Number	Shell Size	A ±0.38	B ±0.12	C ±0.25	D ±0.38	H Max	Thread (MIL S-8879)
R3NP-10	10SL	24.64	18.2	8.64	16.76	4.19	.112-40UNJC-3B
R3NP-14	14S	30.99	23	15.24	23.11	4.19	.112-40UNJC-3B
R3NP-16	16,16S	36.32	24.6	16.51	26.16	4.19	.112-40UNJC-3B
R3NP-18	18	36.58	27	18.80	29.46	4.19	.112-40UNJC-3B
R3NP-20	20	42.42	29.4	20.83	32.77	4.19	.112-40UNJC-3B
R3NP-22	22	44.45	31.8	23.37	35.81	4.19	.112-40UNJC-3B
R3NP-24	24	47.75	34.9	25.91	40.39	4.78	.138-32UNJC-3B
R3NP-28	28	52.34	39.7	30.73	46.99	4.78	.138-32UNJC-3B
R3NP-32	32	65.02	44.5	35.31	53.09	5.33	.164-32UNJC-3B
R3NP-36	36	63.50	49.2	39.37	59.69	5.33	.164-32UNJC-3B
R3NP-40	40	74.17	55.5	42.93	65.79	5.33	.164-32UNJC-3B

All dimensions are in mm except where noted.

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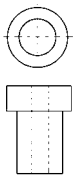
Contact Hole Plugs

At times when all the contact cavities are not used, it is necessary to insert plastic hole plugs into the unused grommet (and/or insulator) wire holes to maintain a moisture seal.

Contact Size	Grommet Hole Plug Part Number	Insulator Hole Plug Part Number	Color
16S,16	R3HPG-16	R3HPI-16	Blue
12	R3HPG-12	R3HPI-12	Yellow
8	R3HPG-8	R3HPI-8	White
4	R3HPG-4	R3HPI-4	Green
0	R3HPG-0	R3HPI-0	Black

Contact Crimp Reduction Sleeves

Contact crimp buckets are intended to give a reliable, gas tight wire termination for specific wire sizes. Occasionally, it is necessary to crimp smaller (or larger) wires than the contact is designed for. Crimp reduction sleeves size the bucket to accept other wire sizes. Crimp expansion sleeves are also available. Please consult our Sales Department for assistance with these.



Reduction Sleeve Part Number	From Contact Size	To Wire Size
R3RS 16-20	16	20
R3RS 16-22	16	22
R3RS 12-16	12	16
R3RS 12-20	12	20
R3RS 8-10	8	10
R3RS 8-12	8	12
R3RS 8-16	8	16
R3RS 4-6	4	6
R3RS 4-8	4	8
R3RS 4-12	4	12
R3RS 0-4	0	4
R3RS 0-8	0	8

Plastic, Protective Caps - For Plugs & Receptacles

These vinyl press-on caps provide protection against dust, dirt and other contaminants during storage or transport.

Connector Shell Size	For Plugs R36, R38, R36PP	For Receptacles R31, R32, R3DM, R3TB
10SL	R3-31	R3-26
14S	R3-51	R3-38
16S, 16	R3-51	R3-42
18	R3-53	R3-45
20	R3-56	R3-51
22	R3-56	R3-53
24	R3-57	R3-56
28	R3-66	R3-58
32	R3-76	R3-66
36	R3-78	R3-71
40	R3-81	R3-76

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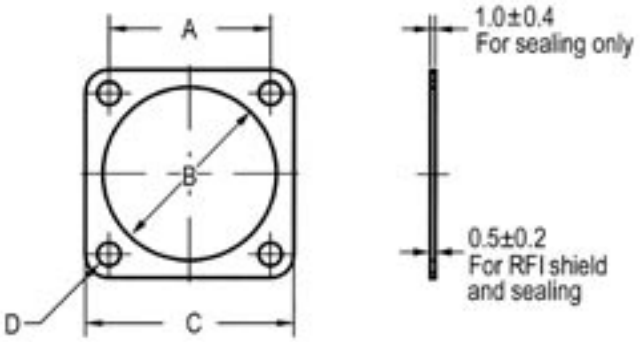
Moisture Sealing & RFI Gaskets For R3 Receptacles -

These square flange gaskets are intended to seal a square flange receptacle (R32, R3TB, R3DM) to a panel. The gaskets are available in neoprene (R3GN); silicone (R3GS); fluoroelastomer* (R3GV); Flame retardant elastomer (R3GFR) and with a tin plated, imbedded screen mesh for sealing plus RFI shielding (R3GRF). These gaskets are available for both front and rear mount receptacles and front mount panel plugs (R3PP).

*Also known as Viton - A trademark of Dupont



Typical Part Number: R3GN-20F
(Size 20 front mount, neoprene for sealing only)

Shell Size	A ±.02	B Front Mount +0.4 -0	B Rear Mount +0.4 -0	C +0.4 -0	D +0.4 -0
10SL	18.2	15.9	18.2	25.4	4.2
14S	23	22.2	24.6	30	4.2
16S, 16	24.6	25.4	27.4	32.5	4.2
18	27	28.6	30.8	35	4.2
20	29.4	31.7	34.2	38	4.2
22	31.8	34.9	37.4	41	4.2
24	34.9	38	40.9	44.5	4.2
28	39.7	44.5	46.7	50.8	5.1
32	44.5	51	53.4	57	5.1
36	49.2	57	59.6	63.5	5.1
40	55.6	62	65.5	70	5.1

All dimensions are in mm.

Operating Temperature
-55˚C to +125˚C - R3GN, R3GFR, R3GRF
-70˚C to +200˚C - R3GS
-50˚C to +200˚C – R3GV

Front & Rear Mount Panel Gasket Part Numbers

Shell Size	Mounting Reference	Neoprene R3GN-	Silicone R3GS-	Fluoroelastomer R3GV-	Flame Retardant R3GFR-	RFI Shielding R3GRF-
10SL	Front	10F	10F	10F	10F	10F
	Rear	10R	10R	10R	10R	10R
14S	Front	14F	14F	14F	14F	14F
	Rear	14R	14R	14R	14R	14R
16S, 16	Front	16F	16F	16F	16F	16F
	Rear	16R	16R	16R	16R	16R
18	Front	18F	18F	18F	18F	18F
	Rear	18R	18R	18R	18R	18R
20	Front	20F	20F	20F	20F	20F
	Rear	20R	20R	20R	20R	20R
22	Front	22F	22F	22F	22F	22F
	Rear	22R	22R	22R	22R	22R
24	Front	24F	24F	24F	24F	24F
	Rear	24R	24R	24R	24R	24R
28	Front	28F	28F	28F	28F	28F
	Rear	28R	28R	28R	28R	28R
32	Front	32F	32F	32F	32F	32F
	Rear	32R	32R	32R	32R	32R
36	Front	36F	36F	36F	36F	36F
	Rear	36R	36R	36R	36R	36R
40	Front	40F	40F	40F	40F	40F
	Rear	40R	40R	40R	40R	40R

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Tool Kit

Turret
R3HT
1612

Manual Crimp Tool
R3HC

Insertion Tool

Extraction Tool

Pneumatic Crimp Tool
400 BHD
With Dies & Locators

Assembly Tools - Kits

R3 Connectors are easily assembled and terminated to wires and cables with easy to use hand or pneumatic tools. The tools listed below can be provided in a custom configured tool kit to fit your needs perfectly. Please consult our Technical Sales Personnel for assistance.

R3 Manual Crimping Tools For Sizes 16 & 12 Contacts

R3's manual crimping tool is factory calibrated to provide over 10,000 crimps without degradation of the crimp joint. Turret style contact positioners are provided to hold contacts in the precise location necessary to guarantee repeatable, reliable connections. Calibration gages are available for quality control checks of your crimp tool to ensure reliability. Specify hand crimping tool part number R3HC; turret positioner R3HCT-1612; and calibration gage R3CG-1612.

R3 Manual Insertion/Extraction Tools

Simplify installation and extraction of all contact sizes. For installation of size 16 and 12 female contacts, guide pins are recommended to ensure ease of socket contact insertion.

R3 Pneumatic Crimp Tools - Models 400 BHD & Model 500

Are necessary for crimping contact sizes 8,4 and 0 due to their metal mass. Crimp die sets and locators are available to fit the pneumatic crimp frames.

Contact Size	Wire Size (AWG)	R3 Contact Part Number	Manual Turret For Crimp Tool Frame R3HC	Pneumatic Crimp Tool 400 BHD		Insertion Tool	Extraction Tool	Guide Pin
				Crimp Die	Locator			
16S Pin	16-18	80003-16XX	R3HT 1612	414DA-16N	4314-2	R3I-16	R3E-16P*	-
16S Socket	16-18	85003-16XX	R3HT 1612	414DA-16N	4314-1	R3I-16	R3E-16S*	GP16
16 Pin	16-18	80004-16XX	R3HT 1612	414DA-16N	4332	R3I-16	R3E-16P*	-
16 Socket	16-18	85004-16XX	R3HT 1612	414DA-16N	4332	R3I-16	R3E-16S*	GP16
12 Pin	12-14	80005-12XX	R3HT 1612	414DA-12N	4330	R3I-12	R3E-12P*	-
12 Socket	12-14	85005-12XX	R3HT 1612	414DA-12N	4331	R3I-12	R3E-12S*	GP12
8 Pin	8-10	80008-08XX	Sizes 8,4, & 0 are not manually crimpable	414DA-8HEX	4329	R3I-8	R3E-8P	-
8 Socket	8-10	85005-08XX		414DA-8HEX	4329	R3I-8	R3E-8S	-
4 Pin	4-6	80007-04XX		414DA-4HEX	4043	R3I-4	R3E-4P	-
4 Socket	4-6	85007-04XX		414DA-4HEX	4043	R3I-4	R3E-4S	-
0 Pin**	0-2	80008-00XX		514DA-0HEX**	5442**	R3I-0	R3E-0P	-
0 Socket**	0-2	85008-00XX		514DA-0HEX**	5441**	R3I-0	R3E-0S	-

* R3 offers sizes 12 and 16 extraction tools in a kit under part number R3K1612

** **Size 0 contacts require use of a Model 500 pneumatic crimp tool due to the physical size of the contact**

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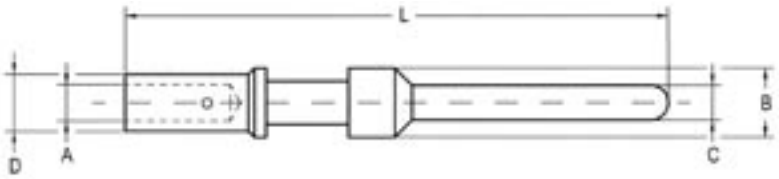
Contacts - Crimp Style

R3 crimp style contacts are produced from high grade copper alloy and are plated with silver or gold as the application requires (recommended practice is to specify gold plating if the voltage or current is less than 1 volt or 10 milliamps respectively). For silver plating add the suffix -VA after the contact part number. For gold plating (2 microns minimum) add the suffix -GA.



Pins or Male Contacts

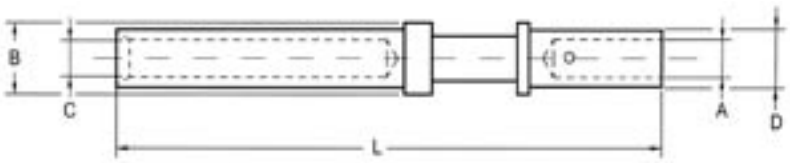
Contact Size	R3 Part Number	For Wire Size (AWG)	A +0-.1	B +0-.1	C +0-.1	D +0-.1	L ±.1
16S	80003-16XX	16	1.7	3.17	1.58	2.6	26.6
16S	80003-18XX	18-20	1.5	3.17	1.58	2.6	26.6
16S	80003-14XX	14-16	2.0	3.17	1.58	2.9	26.6
16	80004-16XX	16	1.7	3.2	1.58	2.6	31.75
16	80004-18XX	18-20	1.5	3.2	1.58	2.6	31.75
16	80004-14XX	14-16	2.0	3.2	1.58	2.9	31.75
12	80005-14XX	14-16	2.0	4.8	2.38	3.8	37.5
12	80005-12XX	12-14	2.5	4.8	2.38	3.8	37.5
12	80005-10XX	10	3.6	4.8	2.38	4.8	37.5
8	80006-08XX	8	4.55	7.8	3.6	6.8	40.7
8	80006-12XX	12-14	2.5	7.8	3.6	6.22	40.7
4	80007-04XX	4-6	7.2	11.0	5.71	9.5	41.25
0	80008-00XX	0	11.5	15.0	9.06	14.35	46.5
4/0	80009-84XX	4/0	16.5	20.0	12.69	20.0	63.0

All dimensions are in mm except where noted.

Shaded contacts are supplied as "standard" unless specified otherwise.

1 Micron = 39 Microinches

Contact Plating Suffix –XX (in microns)	
-GA	Gold over copper (standard) 2 to 3 per MIL-G-45204
-GB	Gold over copper (heavy) 4 to 7 per MIL-G-45204
-VA	Silver (standard) 5.1 to 8.5 per ASTM B 700 Unless specified otherwise, silver plate will be supplied on all contacts.



Sockets or Female Contacts

Contact Size	R3 Part Number	For Wire Size (AWG)	A +.1-0	B +0-.1	C ±.05	D +0-.1	L ±0.1
16S	85003-16XX	16	1.7	2.6	1.64	3.17	26.6
16S	85003-18XX	18-20	1.5	2.6	1.64	3.17	26.6
16S	85003-14XX	14-16	2.0	2.9	1.64	3.17	26.6
16	85004-16XX	16	1.7	2.6	1.64	3.2	36.5
16	85004-18XX	18-20	1.5	2.6	1.64	3.2	36.5
16	85004-14XX	14-16	2.0	2.9	1.64	3.2	36.5
12	85005-14XX	14-18	2.0	3.8	2.47	4.8	37.5
12	85005-12XX	12	2.5	3.8	2.47	4.8	37.5
12	85005-10XX	10	3.6	4.8	2.47	4.8	37.5
8	85006-08XX	8	4.55	6.8	3.72	7.8	40.5
8	85006-12XX	12-14	2.5	6.22	3.72	7.8	40.5
4	85007-04XX	4-6	7.2	9.5	5.83	11.0	42
0	85008-00XX	0	11.5	14.35	9.18	15.0	46.5
4/0	85009-84XX	4/0	16.5	20.0	12.85	20.0	65.9

All dimensions are in mm except where noted.

Thermocouple Contacts

These contacts are also available in thermocouple alloys - chromel, alumel, copper, constantan, and iron. For thermocouple contacts, add the suffix -TCX in the part number "wire termination type" to specify the thermocouple materials required. Example:
TC1 - Chromel and Alumel - Type K
TC2 - Copper and Contstantan - Type T
TC3 - Constantan and Iron - Type J
TC4 - Chromel and Constantan - Type E

All "standard" contacts can use "reduction sleeves" to decrease the crimp bucket diameter. For smaller wire sizes see page 41.

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Materials	
Shells	Aluminum Alloy – with hard coat, black anodic finish. Options include stainless steel or plastic.
Contacts	Copper alloy with silver or gold plating or thermocouple alloys.
Insulators	High insulation synthetic rubbers per MIL-R-3065* - polychloroprene, silicone or fluoroelastomers.
Bayonet Lock Pins	Stainless steel per ASTM A 581 or ASTM A 582.

* ASTM D 2000

Operating Temperature	
Neoprene	-55°C to +125°C
Silicone	-70°C to +200°C
Fluoroelastomer	-50°C to +200°C

Grommet Hole Wire Seal Range	
Hole Size	Sealing Range (mm)
16	2.3 - 3.0
12	3.2 – 4.5
8	3.8 – 6.5
4	7.1 – 9.3
0	10 – 13.7

Service Rating Data & Dielectric Strength @ Sea Level

Service Rating	DC Operating Voltage	AC Operating Voltage	Minimum Flash Over VAC RMS	Test Voltage HiPot VAC RMS
I	250 VDC	200 VAC	1,400 V	1,000 V
A	700 VDC	500 VAC	2,800 V	2,000 V
D	1,250 VDC	900 VAC	3,600 V	2,800 V
E	1,750 VDC	1,250 VAC	4,500 V	3,500 V
B	2,450 VDC	1,750 VAC	5,700 V	4,500 V
C	4,200 VDC	3,000 VAC	8,500 V	7,000 V

No evidence of breakdown at the test voltage indicated - contact to contact and contact to shell for one minute.

Contact Disengaging Force		
Contact Size	Minimum Disengaging Force	
16S,16	3.6 oz	100 grams
12	5.4 oz	150 grams
8	10.8 oz	310 grams
4	14.4 oz	410 grams
0	30.6 oz	870 grams

Contact Rating @ 25 ± 3 Degrees C

Contact Size	Max Current	Rated & Test Current*	Voltage Drop At Test Current * (Millivolts Max)	Contact Resistance (Milliohms)
16S, 16	22 Amps	13 Amps	74 MV	6.0
12	41 Amps	23 Amps	63 MV	3.0
8	73 Amps	46 Amps	65 MV	1.0
4	135 Amps	80 Amps	58 MV	0.5
0	245 Amps	150 Amps	53 MV	0.2

* Per MIL-C-39029D - Wire bucket to wire bucket on a mated pair with nickel plated wire.

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