

Product Facts

- Immersion-resistant crimp splices are on QPL for MIL-S-81824
- MIL-Spec approval
- Small size
- Light weight

Applications

Insulation and strain relief

MiniSeal wire-to-wire splic-

ing products offer solutions

for hundreds of aerospace

and defense applications.

splices provide excellent

reliability, long term per-

qualification, and a low

sist of a plated copper

crimp barrel and a sepa-

tion of wires, from 1:1 to

and most environment-

integrity of the splice by

chemical and galvanic

preventing the penetration

of liquids and the resulting

installed cost.

formance, MIL-S-81824/1

MiniSeal crimp splices con-

rate, heat-shrinkable, trans-

parent sealing sleeve. They

can be used on a combina-

10:10. MiniSeal splices are

resistant splices available.

They preserve the electrical

one of the smallest, lightest,

These environment-resistant

Easy installation

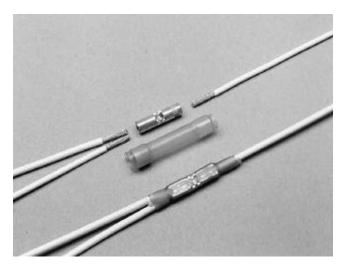
corrosion.

Available in: Americas Furope Asia Pacific

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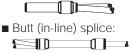
MiniSeal High-Performance, Immersion-Resistant Crimp Splices



Product Selection Process

1. Determine the type of splice required.

■ Stub (parallel) splice:



- 2. Determine which crimp barrel plating is required:
 - Tin plating, recommended for tin or silverplated wire
 - Nickel plating, recommended for nickel-plated wire, or silver-plated wire in applications above 150°C [302°F].
- 3. Calculate the size of crimp barrel required. Using the CMA/mm² worksheet on the next page, calculate the total cross section to be spliced by adding the circular mil area (CMA) or square millimeters (mm²) of each wire.

Stub splice: Add the CMA or mm² of all wires together.

Butt splice: Calculate each side separately (see example on the worksheet).

to change.

Table A provides the CMA of typical conductors. (Both CMA and mm² give the same results, so choose either CMA or mm² as your unit of measure for selection purposes and continue to use it for all your selection criteria.)

4. Select the color code for the size crimp barrel required. Using Table B (page 8-23), select the crimp barrel-colorcoded red, blue, or yellow-for the CMA or mm² you calculated.

Stub splice: Select the barrel that will accommodate the total cross section.

Butt splice: Select the smallest barrel that will accommodate the largest CMA/mm² required. (Refer to the example in the worksheet for a more specific description.) If the CMA/mm² of the smaller side of a butt splice is too small for the size barrel required to fit the larger side, increase the CMA/mm² —either by doubling back one wire (stripping the conductor twice the length you would ordinarily strip it and then folding it back) or by adding a filler wire. 5. Determine the type of sealing sleeve required. Some wire insulations will not fit in the holes of the sealing sleeve inserts, so be sure to compare the internal diameter of each hole with the outer diameter of the wire(s) you intend to insert in that hole. To create a reliable seal, place a maximum of two wires in any hole of the sealing sleeve.

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6. Select the part number. Turn to the MiniSeal part number selection tables (Tables C and D, page 8-23 and 8-24) and find the table for the type of splice (stub or butt) required.

Using the appropriate table, find the crimp barrel size range and the size and number of wires for your application. Then select the part number for the type of plating required. The color code accompanying that part number should match the color code you arrived at in Table B, confirming that the part number you have selected is correct.

Dimensions are shown for reference purposes only. Specifications subject

USA: 1-800-522-6752 Canada: 1-905-470-4425 Mexico: 01-800-733-8926 C. America: 52-55-5-729-0425 South America: 55-11-3611-1514 Japan: 81-44-900-5102 Singapore: 65-4866-151 UK: 44-1793-528171

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and inches unless otherwise specified. Values in brackets are U.S. equivalents.

Dimensions are in millimeters

Wire-to-Wire Splicing

The CMA for AWG 22 wire

in Table A is 754 (0.38 mm²).

Side one is therefore calcu-

 $CMA = 3 \times 754 = 2262$

 $(mm^2 = 3 \times 0.38 = 1.14)$

lated as follows:

MiniSeal High-Performance, Immersion-Resistant Crimp Splices (Continued)

Table A. CMA of Typical	Strands	7	19	19	19	19	19	19	19	37
Conductors	AWG	28	26	24	22	20	18	16	14	12
	CMA	177	304	475	754	1216	1900	2426	3831	5874
	mm ²	0.09	0.15	0.24	0.38	0.61	0.95	1.21	1.92	2.94
Table B. Crimp Barrel Color	CMA Range		m	m² Range		1:1 Splice	(AWG Size)		Color	Code
Code Selection	304–1510		0	0.15–0.75		26–20		Red		
	779–2680		0	0.39–1.34 20–16		-16	δ		Blue	
	1900–6755	55		0.95–3.37 18–		-12		Yell	ow	
CMA/mm ² Worksheet	Example:									
	Application: with three A one side and	WG 22 wi	res in	CMA for A	The other side, where the CMA for AWG 18 is 1900, is calculated as:					
	wire in the other side:			$CMA = 1 \times 1900 = 1900$						

CMA = 1 x 1900 = 1900 $(mm^2 = 1 \times 0.95 = 0.95)$

Using Table B to select the smallest crimp barrel that will easily fit 2262 CMA (0.95 mm²), the blue barrel is the correct choice.

Wire Number	СМА	mm ²	
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			Part Number:
Total			

Table C. Stub (Parallel) Splices

	Par	t No.	Crimp Barrel Size Range		I.D.dime de 1	ensions Side	2
Illustration	Tin Plated	Nickel Plated	CMA [mm ²] Min.–Max.	Sealing Insert	Max. No. of Wires	Sealing Insert	Max. No. of Wires
0 m	D-436-0128 Red	D-436-0119 Red	304–1510 [0.15–0.75]	O 2.16 [.085]	2	0	2
O D	D-436-58 Blue	D-436-75 Blue	779–2680 [0.39–1.34]	4.56 [.180]	2	2.28 [.090]	2
	D-436-59 Yellow	D-436-76 Yellow	1900—6755 [0.95–3.37]	4.56 [.180]	2	2.28 [.090]	2
	D-436-60 Blue	D-436-77 Blue	779–2680 [0.39–1.34]	2.03 [.080]	10 (2 per hole)	6.35 [.250]	2
	D-436-61 Yellow	D-436-78 Yellow	1900–6755 [0.95–3.37]	2.03 [.080]	10 (2 per hole)	6.35 [.250]	2

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Table D. Butt (in-line) splices

			Crimp Barrel		I.D.dim	ensions		
Illustration Part No.		No.	Size Range	Side	e 1	Side	Side 2	
nustration	Tin Plated	Nickel Plated	CMA [mm ²] Min.–Max.	Sealing Insert	Max. No. of Wires	Sealing Insert	Max. No. of Wires	
Dar	D-436-36* Red	D-436-82 Red	304–1510 [0.15–0.75]	2.16 [.085]	2	2.16 [.085]	2	
al ane	D-436-37* Blue	D-436-83 Blue	779–2680 [0.39–1.34]	2.79 [.110]	2	2.79 [.110]	2	
None D	D-436-38* Yellow	D-436-84 Yellow	1900–6755 [0.95–3.37]	4.32 [.170]	2	4.32 [.170]	2	
a are	D-436-0110 Red	D-436-85 Red	304–1510 [0.15–0.75]	2.36 [.093]	6	4.06 [.160]	2	
a and	D-436-52 Blue	D-436-86 Blue	779–2680 [0.39–1.34]	2.36 [.093]	6 (2 per hole)	4.06 [.160]	2	
a and	D-436-53 Yellow	D-436-87 Yellow	1900–6755 [0.95–3.37]	2.36 [.093]	6 (2 per hole)	4.06 [.160]	2	
a and	D-436-0115 Red	D-436-88 Red	304–1510 [0.15–0.75]	2.36 [.093]	6 (2 per hole)	2.36 [.093]	6 (2 per hole)	
and and the	D-436-42 Blue	D-436-89 Blue	779–2680 [0.39–1.34]	2.36 [.093]	6 (2 per hole)	2.36 [.093]	6 (2 per hole)	
a and	D-436-43 Yellow	D-436-90 Yellow	1900–6755 [0.95–3.37]	2.36 [.093]	6 (2 per hole)	2.36	6 (2 per hole)	

*Qualified to MIL-S-81824/1.

Table E. Crimp Barrel Only

				Crimp Barrel Size Range
Туре	Color Code	Tin-Plated	Nickel Plated	CMA [mm ²] Min Max.
Butt (in-line)	Red	D-609-06	D-609-09	304-1510 [0.15-0.75]
Butt (in-line)	Blue	D-609-07	D-609-10	779-2680 [0.39-1.34]
Butt (in-line)	Yellow	D-609-08	D-609-11	1900-6755 [0.95-3.37]
Stub (Parrel)	Red	D-609-03	D-609-12	304-1510 [0.15-0.75]
Stub (Parrel)	Blue	D-609-04	D-609-13	779-2680 [0.39-1.34]
Stub (Parrel)	Yellow	D-609-05	D-609-14	1900-6755 [0.95-3.37]

Table F. Sealing Sleeve Only

	L max	
and the second		100000
		ØA min.
	Hound	illium 1

Part No.	Color Code	L Max.	A Min.
D-436-0096	Red	29.2 [1.15]	2.16 [0.085]
D-436-0097	Blue	29.2 [1.15]	2.8 [0.110]
D-436-0098	Yellow	29.2 [1.15]	4.32 [0.170]

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Product Characteristics

MiniSeal High-Performance, Immersion-Resistant Crimp Splices (Continued)

Material	
Insulation	Radiation-crosslinked, heat-shrinkable polyvinylidene fluoride
Crimp barrel	Tin- or nickel-plated copper
Meltable inserts	Meltable thermoplastic
Typical Performance	
Voltage drop	6.9 mV at 4.5 A vs 8.1 mV for an equal length of wire
Tensile strength	Exceeds strength of conductor
Dielectric strength	2.5 kV
Temperature rating	-55°C to 150°C [-67°F to 302°F]
Insulation resistance	5000 megohms

Specifications/Approvals

ovals	Series	Military
	D-436	MIL-S-81824/1 for D-436-36/37/38

Installation

For proper installation of these devices, the correct crimp tool (Raychem part number AD-1377) and a heating tool and reflector attachment must be used. Any one of the following Raychem heating tools is recommended:

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■ HL1802E
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■ AA-400 Super Heater

Refer to Raychem installation procedure RCPS 200-20 for detailed instructions and recommended reflector attachments. You will find ordering information for these tools in Section 10.

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