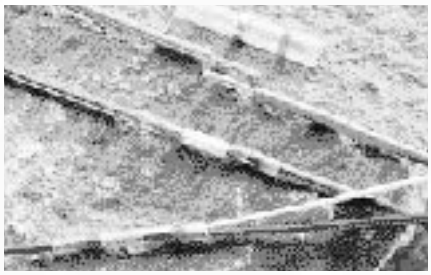
Raychem

SolderSleeve® One-Step

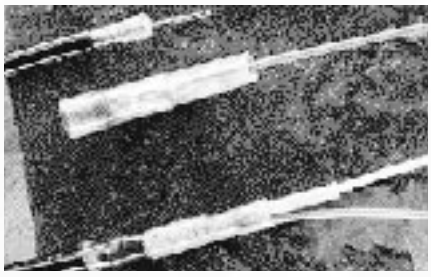
Wire and Cable Terminators

Selection Guide



Splicing wire to wire

Terminating wire to component terminal



Terminating coaxial cables

Terminating ground wire to cable shield

Preinstalled wire lead

Introduction

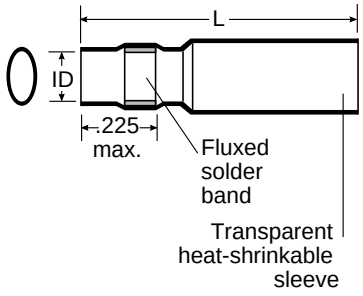
Proven in three decades of use, SolderSleeve one-step wire and cable terminators provide electrical termination in a wide range of interconnect applications–for terminating wire to component terminals, for terminating ground wires to cable shields, for terminating coaxial cable, and for wire-to-wire splicing.

With one-step SolderSleeve products:
- Compatibility covers many component dielectric materials and wire installations, including sensitive low-temperature materials.
- A precisely engineered, fluxed solder preform within the heat-shrinkable thermoplastic sleeve provides a completely soldered, strain-relieved, encapsulated termination.
- Low-temperature wires can be terminated in applications with maximum operating temperatures up to 125°C.

One-step terminators have a one-piece design, which simplifies installation, and transparent insulation sleeves, which make inspection easy.

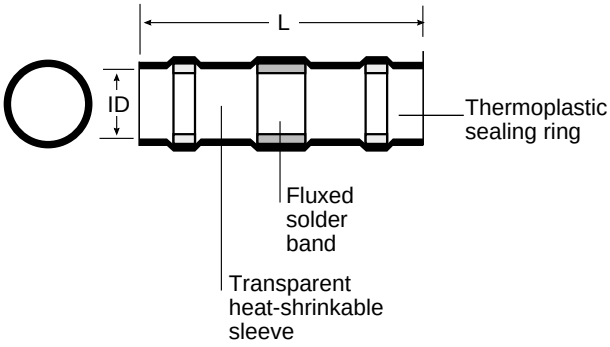
Sleeve style and size range available (dimensions in inches)

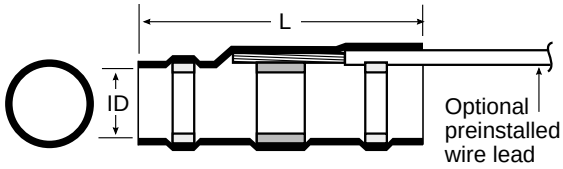
CWT-15XX Series*
Terminating wires to component terminals
(pin, post, tab)



*Optional tape carrier available.

CWT-38XX Series
Terminating ground wire to cable shield
Terminating coaxial cable
Wire to wire splicing





Part number	Min. inside diameter (ID)	Sleeve length
CWT-1501	.060	.575 ±.060
CWT-1502	.090	.575 ±.060
CWT-1503	.110	.575 ±.060
CWT-1504	.150	.575 ±.060
CWT-1505	.175	1.00 ±.060
CWT-1506	.230	1.00 ±.060

Part number	Min. inside diameter (ID)	Sleeve length
CWT-3801	.060	1.50 ±.150
CWT-3802	.080	1.50 ±.150
CWT-3803	.110	1.50 ±.150
CWT-3805	.175	1.50 ±.150
CWT-3806	.230	1.50 ±.150
CWT-3807	.275	1.50 ±.150
CWT-3809	.345	1.50 ±.150
CWT-3811	.430	1.50 ±.150
CWT-3813	.530	1.50 ±.150

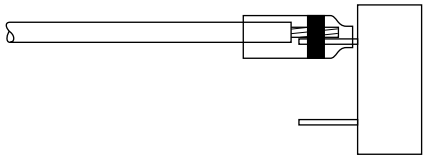
Selection procedure

Select application type:
- Terminating wires to component terminals (use Table A)
- Terminating ground wires to cable shields (use Table B)
- Terminating coaxial cables (use Table D)
- Wire-to-wire splicing (use Table F)

Select size:
- Wire AWG
- Cable (dimensions)
- Connection point (pin, post, or tab dimensions)

Select options:
- Preinstalled wire leads (use Tables B, C, D, E)
- Tape carrier (available with CWT-15 series only. Use Table A)

Table A: Terminating wires to component terminals (dimensions in inches)



1.
Determine your component connection point type (pin, post, or tab) and dimensions.

2.
Determine your wire gauge.

3.
Optional: Select center-to-center spacing of tape carrier. This should match center spacing of component terminals.

4.
Select part number.

Connection point type and size			Tape carrier options–center-to-center spacing of sleeves				
Terminal dimensions Pin or post		**Wire AWG**	**None**	**.100**	**.109**	**.125**	**.156**
W	W = up to .025	24–22	CWT-1501	CWT-1501T1	CWT-1501T2	CWT-1501T3	CWT-1501T4
		29	CWT-1502				CWT-1502T4
	W = .025 to .035	24	CWT-1501	CWT-1501T1	CWT-1501T2	CWT-1501T3	CWT-1501T4
Pin		22	CWT-1502				CWT-1502T4
		20	CWT-1503				
W	W = .035 to .045	24–22	CWT-1502				
		20–18	CWT-1503				
	W = .045 to .060	24–22	CWT-1503				
Post		20–18	CWT-1504				
Tab							
	W = up to .060	24–18	CWT-1501	CWT-1501T1	CWT-1501T2	CWT-1501T3	CWT-1501T4
W	W = .050 to .090	24–18	CWT-1502				CWT-1502T4
	W = .070 to .110	24–18	CWT-1503				
	W = .100 to .150	24–18	CWT-1504				
Tab	W = .150 to .187	24–18	CWT-1505				
	W = .187 to .250	24–18	CWT-1506				

Part number description

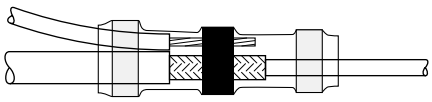
CWT - 15 XX (ZZ)

Options:
Sleeves on tape carrier

Size designator:
01–06

Example:
CWT-1501 (without tape carrier)
CWT-1501T3 (with tape carrier)

Table B: Terminating ground wires to cable shields (dimensions in inches)



1.
Determine your cable dimensions.

2.
Optional: Select preinstalled wire lead type (use Table C)

3.
Select part number.

	Preinstalled lead options (see Table C for lead description)		
Cable dimension (jacket OD)	**None**	**22 AWG stranded white**	**22 AWG stranded green**
.030 to .060	CWT-3801		
.040 to .080	CWT-3802		
.060 to .110	CWT-3803	CWT-3803W1	CWT-3803W2
.100 to .175	CWT-3805	CWT-3805W1	CWT-3805W2
.150 to .230	CWT-3806	CWT-3806W1	CWT-3806W2
.170 to .275	CWT-3807	CWT-3807W1	CWT-3807W2
.250 to .345	CWT-3809	CWT-3809W1	CWT-3809W2
.300 to .430	CWT-3811		
.350 to .530	CWT-3813		

Table C: Preinstalled lead description

Insulation type	Conductor type	Size	Plating	Length (min.)	Color	Part number suffix
XL polyethylene	stranded	22 AWG	tin	6 inches	white	W1
XL polyethylene	stranded	22 AWG	tin	6 inches	green	W2

Part number description

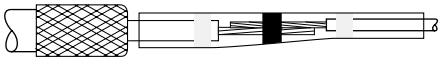
CWT - 38 XX ( )

Options:
Preinstalled wire leads

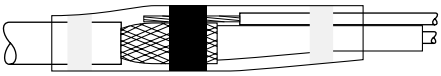
Size designator
01–13

Example:
CWT-3805 (without lead)
CWT-3805W2 (with lead)

Table D: Terminating coaxial cables (dimensions in inches)



Center conductor soldering and insulation



Soldering the lead to the shield, insulation of the assembly

1.
Determine your cable RG number or dimensions.

2.
Optional: Select preinstalled wire lead type (use Table E).

3.
Select part number

Note:
Terminating the cable shield and center conductor requires two CWT series part numbers: one for the shield terminator and one for the center conductor terminator.

Cable RG number or dimensions				**Preinstalled lead options (see Table E for lead description)**	
Typical RG no.		**Center conductor dielectric O.D.**	**Shield terminator jacket O.D.**	**None**	**With preinstalled lead***
174	Ctr. conductor			CWT-3803	CWT-3803WX
	Shield			CWT-3805	CWT-3805WX
58	Ctr. conductor			CWT-3803	CWT-3803WX
	Shield			CWT-3806	CWT-3806WX
59	Ctr. conductor			CWT-3805	CWT-3805WX
	Shield			CWT-3807	CWT-3807WX
		.030 to .090		CWT-3803	CWT-3803WX
		.080 to .110		CWT-3803	CWT-3803WX
		.110 to .130		CWT-3805	CWT-3805WX
			.050 to .110	CWT-3803	CWT-3803WX
			.100 to .175	CWT-3805	CWT-3805WX
			.125 to .235	CWT-3806	CWT-3806WX

* X designates part number suffix for preinstalled wire lead type (see Table E).

Table E: Preinstalled lead description

Insulation type	**Conductor type**	**Size**	**Plating**	**Length (min.)**	**Color**	**Part number suffix**
XL polyethylene	stranded	22 AWG	tin	6 inches	white	W1
XL polyethylene	stranded	22 AWG	tin	6 inches	green	W2
	solid bus	22 AWG	solder	1 inches		W3
XL ETFE	solid	26 AWG	silver	6 inches	white	W4
XL ETFE	solid	26 AWG	silver	6 inches	blue	W5

Part number description

CWT - 38 XX ( )

Options:
Preinstalled wire lead

Size designator
01–13

Example:
CWT-3805 (without lead)
CWT-3805W4 (with lead)

Table F: Wire-to-wire splicing

1.
Determine wire gauge sizes for both sides of splice.

2.
Determine number of wires (1 or 2 wires) for both sides of splice and select part number.

For splices containing two wire gauges: Find wire used on one side of splice (side A) in left column; find wire used on other side of splice (side B) in top row across; the splice designator is found at the intersection of these two.

For splices containing more than two wire gauges: Using Table G calculate the circular mil area (CMA) of all the wires spliced and select the sleeve recommended for that CMA from Table H.

Notes:
While all combinations listed will give satisfactory solder joints, the degree of strain relief obtained depends on the outside diameter (OD) of the wires being joined. Refer to Table H for the recommended size range for the sleeves.

Wires 16 AWG and larger and wires having more than 19 strands should be pretinned prior to splicing to obtain the optimum solder-joint quality.

Side A: Size and number of conductors		Side B: Size and number of conductors							
		26 AWG 1	26 AWG 2	24 AWG 1	24 AWG 2	22 AWG 1	22 AWG 2	20 AWG 1	20 AWG 2
26 AWG	1	CWT-3801	CWT-3801	CWT-3801	CWT-3801	CWT-3801	CWT-3802	CWT-3802	CWT-3803
	2	CWT-3801	CWT-3801	CWT-3801	CWT-3802	CWT-3801	CWT-3803	CWT-3802	CWT-3803
24 AWG	1	CWT-3801	CWT-3801	CWT-3801	CWT-3801	CWT-3801	CWT-3803	CWT-3802	CWT-3803
	2	CWT-3801	CWT-3802	CWT-3801	CWT-3802	CWT-3802	CWT-3803	CWT-3803	CWT-3803
22 AWG	1	CWT-3801	CWT-3801	CWT-3801	CWT-3802	CWT-3802	CWT-3803	CWT-3803	CWT-3803
	2	CWT-3802	CWT-3803	CWT-3803	CWT-3803	CWT-3803	CWT-3803	CWT-3803	CWT-3805
20 AWG	1	CWT-3802	CWT-3802	CWT-3802	CWT-3803	CWT-3803	CWT-3803	CWT-3803	CWT-3805
	2	CWT-3803	CWT-3803	CWT-3803	CWT-3803	CWT-3803	CWT-3805	CWT-3805	CWT-3805
18 AWG	1	CWT-3803	CWT-3803	CWT-3803	CWT-3803	CWT-3803	CWT-3803	CWT-3803	CWT-3805
	2	CWT-3805	CWT-3805	CWT-3805	CWT-3805	CWT-3805	CWT-3805	CWT-3805	CWT-3805
16 AWG	1	CWT-3803	CWT-3803	CWT-3803	CWT-3803	CWT-3803	CWT-3805	CWT-3805	CWT-3805
	2	CWT-3805	CWT-3805	CWT-3805	CWT-3805	CWT-3805	CWT-3805	CWT-3805	CWT-3806
14 AWG	1	CWT-3805	CWT-3805	CWT-3805	CWT-3805	CWT-3805	CWT-3805	CWT-3805	CWT-3805
	2	CWT-3806	CWT-3806	CWT-3806	CWT-3806	CWT-3806	CWT-3806	CWT-3806	CWT-3806
12 AWG	1	CWT-3805	CWT-3805	CWT-3805	CWT-3805	CWT-3805	CWT-3806	CWT-3806	CWT-3806
	2	CWT-3807	CWT-3807	CWT-3807	CWT-3807	CWT-3807	CWT-3807	CWT-3807	CWT-3807

Side A: Size and number of conductors		Side B: Size and number of conductors							
		18 AWG 1	18 AWG 2	16 AWG 1	16 AWG 2	14 AWG 1	14 AWG 2	12 AWG 1	12 AWG 2
26 AWG	1	CWT-3803	CWT-3805	CWT-3803	CWT-3805	CWT-3805	CWT-3806	CWT-3806	CWT-3807
	2	CWT-3803	CWT-3805	CWT-3803	CWT-3805	CWT-3805	CWT-3806	CWT-3806	CWT-3807
24 AWG	1	CWT-3803	CWT-3805	CWT-3803	CWT-3805	CWT-3805	CWT-3806	CWT-3806	CWT-3807
	2	CWT-3803	CWT-3805	CWT-3803	CWT-3805	CWT-3805	CWT-3806	CWT-3806	CWT-3807
22 AWG	1	CWT-3803	CWT-3805	CWT-3803	CWT-3805	CWT-3805	CWT-3806	CWT-3806	CWT-3807
	2	CWT-3803	CWT-3805	CWT-3805	CWT-3805	CWT-3805	CWT-3806	CWT-3806	CWT-3807
20 AWG	1	CWT-3803	CWT-3805	CWT-3805	CWT-3805	CWT-3805	CWT-3806	CWT-3806	CWT-3807
	2	CWT-3805	CWT-3805	CWT-3805	CWT-3806	CWT-3805	CWT-3806	CWT-3806	CWT-3807
18 AWG	1	CWT-3805	CWT-3805	CWT-3805	CWT-3805	CWT-3805	CWT-3806	CWT-3806	CWT-3807
	2	CWT-3805	CWT-3806	CWT-3805	CWT-3805	CWT-3806	CWT-3807	CWT-3807	CWT-3807
16 AWG	1	CWT-3805	CWT-3805	CWT-3805	CWT-3806	CWT-3805	CWT-3807	CWT-3806	CWT-3807
	2	CWT-3805	CWT-3806	CWT-3806	CWT-3806	CWT-3806	CWT-3807	CWT-3807	CWT-3807
14 AWG	1	CWT-3805	CWT-3806	CWT-3805	CWT-3806	CWT-3806	CWT-3807	CWT-3807	CWT-3807
	2	CWT-3806	CWT-3807	CWT-3806	CWT-3807	CWT-3807	CWT-3807	CWT-3807	CWT-3807
12 AWG	1	CWT-3806	CWT-3806	CWT-3806	CWT-3806	CWT-3806	CWT-3807	CWT-3807	CWT-3807
	2	CWT-3807	CWT-3807	CWT-3807	CWT-3807	CWT-3807	CWT-3807	CWT-3807	CWT-3807

Table G: Circular mil area (CMA) selection

For splices containing more than two wire gauges: Use this table to calculate the circular mil area (CMA) of all the wires spliced. Select the sleeve recommended for that CMA from Table H.

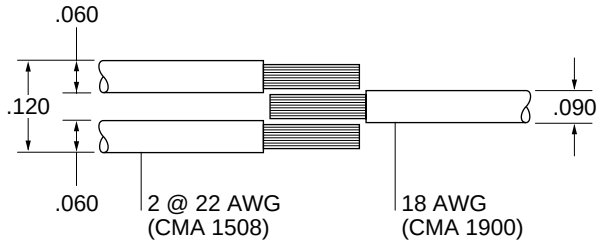
AWG	28	26	24	22	20	18	16	14	12
CMA	177	304	475	754	1216	1900	2426	3831	5874

Table H: Multiwire splice part number selection (dimensions in inches)

	Wire O.D.		**CMA**	
	Min.	**Max.**	**Min.**	**Max.**
CWT-3801	0.03	0.06	450	1450
CWT-3802	0.04	0.08	800	1900
CWT-3803	0.06	0.11	1650	3500
CWT-3805	0.08	0.175	2900	7200
CWT-3806	0.12	0.235	6100	11000
CWT-3807	0.16	0.275	10000	25000

CMA example

Multiwire splice



Total CMA = 3408

Correct part number selection based on CMA and Wire O.D. = CWT-3805

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